The development of emotional intelligence for increased work engagement of employees in a medium-sized South African audit firm

by

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DECLARATION

I, Ben Frey, student number 32299133, declare that this dissertation entitled *"The development of emotional intelligence for increased work engagement of employees in a medium-sized South African audit firm"* is my own work and that all sources that I have used or have quoted from have been indicated and acknowledged by means of complete references.

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Ben Frey

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ABSTRACT

TITLE OF DISSERTATION:

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ABSTRACT

Flourishing organisations realise that employees make a critical difference when it comes to competitiveness, performance and innovativeness. Employees are required to be dedicated, energetic and absorbed in their work (Bakker & Schaufeli, 2008). In short, organisations require employees who are engaged.

The general aim of this research was to use a controlled experimental research design to establish whether the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence and thus improve their levels of work engagement.

The researcher concluded that the intervention did not result in a significant increase in the employees' levels of emotional intelligence and work engagement.

The researcher anticipated that levels of emotional intelligence would significantly predict the levels of work engagement. The study did find that overall emotional intelligence was a significant predictor of total work engagement, but individual components of emotional intelligence were generally not.

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CHAPTER 1: SCIENTIFIC ORIENTATION TO THE RESEARCH

1.1 Introduction

This chapter provides an overview of the study's scientific orientation and discusses the focus of the research and the environment in which it was conducted. The chapter also explains the general and secondary research questions from which the researcher derived the research aims, and positions the study within the various research paradigms. The chapter concludes with an overview of the research design, which includes the approach and method adopted in the study.

1.2 Background information and motivation

Flourishing organisations realise that employees make a critical difference when it comes to competitiveness, performance and innovativeness. Organisations expect their employees to show initiative, to be proactive, to collaborate and to take responsibility for their own professional development. Organisations need employees who are dedicated, energetic and absorbed in their work (Bakker & Schaufeli, 2008).

Organisations have evolved from operating in a purely cognitive environment to one in which emotions play a greater role in work life. Modern organisations are trying to produce more output with less employee input, and thus have no choice but to *engage* the body, mind and soul of every employee (Ulrich, 1997). Being emotionally intelligent has become a skill that enables employees to perform better.

Bay and McKeage (2006) have linked emotional intelligence to accountants, as well as their ability to perform better in areas such as leadership, client relationships and possibly decision making.

According to Bay and McKeage (2006), the level of emotional intelligence among undergraduate students in the United States of America (USA) could be concerning, and attempts to increase the emotional intelligence of students might require targeted educational interventions.

Esmond-Kiger, Tucker, and Yost (2006) argued that if the goal of the accounting profession is to recruit and develop the best and brightest to lead the profession into the future, then the profession should not be content with minimally acceptable emotional intelligence levels on the part of accountants.

According to Jonker (2009) there is a need to develop emotional intelligence in the accounting profession. The first reason for the lack of emotional intelligence in many accountants is that training for most accounting professions focus mostly on technical competencies. Secondly, it can be assumed that people in the accounting profession have a preference to work with facts and figures, leaving the development of emotional intelligence behind. Jonker (2009) also cited that the most successful partners in many accountancy firms are the ones who display high levels of emotional intelligence.

Jonker (2009) utilised an experimental design and the results showed an improvement in total emotional intelligence levels.

In the South African context, Herman (2012) hypothesised that an emotional intelligence intervention would increase the level of emotional intelligence among workers, and that they would be better able to regulate their emotional states at work. An intervention of this nature should result in increased levels of positive affect experiences at work, which should lead to increased levels of work engagement.

What made the study of Herman (2012) unique is that the emotional intelligence programme attempted to enhance positive psychological resources such as resilience and the ability to cope. Herman cautioned that readers should view the research results in the context of the limitations he identified in the study. The total number of employees in the sample was only 35, and Herman recommended a replication of the study with a larger sample size at another branch of the partnering organisation. Another recommendation was to replicate the research in other organisations and industries.

1.3 Problem statement

Based on the preceding discussion, the aim of this research study was to add to the current literature on emotional intelligence and work engagement in South Africa, and the audit profession in particular. This could be achieved by empirically investigating the effects of an intervention aimed at increasing levels of emotional intelligence on work engagement. The researcher hypothesised that the empirical investigation of the link between the two constructs could assist in assessing whether an increase in emotional intelligence would lead to an increase in work engagement.

The researcher faced a few challenges in accessing research on emotional intelligence and work engagement, firstly, in the South African context, and secondly in the audit profession.

During the proposal phase of the study, the researcher noted that there were only a handful of academic articles available on emotional intelligence and how it can be developed successfully in South Africa, and specifically in the audit profession.

According to Herman (2012), another area of research that merits investigation is the relationship between emotional intelligence and work engagement, and achieving more statistical significance in the research.

Herman's (2012) study was the first in the South African context that attempted to investigate the relationship between emotional intelligence and work engagement. He proposed that employees need to manage all aspects of their emotional experiences to ensure a positive emotional state, which would produce a positive upward spiral of performance. Personal resources are required to increase work engagement and ultimately organisational performance in terms of the Job Demands-Resources Model. This work engagement model links job and personal resources to work engagement, and ultimately to positive organisational outcomes (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007a).

The construct of emotional intelligence appears to have a huge influence on individual levels of work engagement. However, no integrated theoretical and empirical model

has yet been developed to explain the nature of the effect of emotional intelligence and work engagement variables.

From a theoretical perspective, this study could provide useful insight into understanding the relationship between emotional intelligence, as the independent variable, and work engagement (characterised by vigour, dedication and absorption), as the dependent variable, particularly if a significant relationship does exist. Understanding the relationship will enable organisations such as accounting firms to provide emotional intelligence interventions to staff members in order to improve work engagement.

Potential contribution at an empirical level

Numerous studies are available on the concept and importance of emotional intelligence and work engagement as separate constructs. However, there is a paucity of empirical research focusing on the link between the two, and especially in the South African context. This study will hopefully make a significant contribution to the existing research.

The impact of emotional intelligence on work engagement has rarely been investigated, and the value of this study is that it should empirically demonstrate the influence of emotional intelligence on work engagement.

Potential contribution at a practical level

This study should be able to assist practitioners, academics and policy makers working in different industries and organisations to better understand emotional intelligence and work engagement when considering key indicators that can impact on work engagement in different industries. Consequently, if this can be achieved, the outcome should be sufficient to justify the relevance of this study. The potential positive result of the research should indeed strengthen the notion that employees' level of emotional intelligence do matter in terms of whether or not employees are engaged in their work roles.

The ability to engage and retain valuable employees has a huge impact on an organisation's bottom line. The findings should be useful for future researchers exploring the possibility of lowering the effects of turnover and absenteeism where a statistical and practical significant relationship between these constructs exists.

In summary, the first contribution of this study is the development of emotional intelligence and work engagement in an audit firm environment. The second meaningful contribution is adding to the knowledge base on the link between emotional intelligence and work engagement.

1.3.1 General research question

Considering the development of emotional intelligence and work engagement in the context of the research environment, the following general research question was formulated for this study:

Will the development of emotional intelligence lead to an increase in the work engagement of employees in a medium-sized South African audit firm?

1.3.2 Research questions

The research questions consisted of those that examined the review of available literature and those that considered the empirical aspects of the research.

The research questions for the literature review were formulated as follows:

(1) What is emotional intelligence and what does it comprise?
(2) What is work engagement and what does it comprise?
(3) Is there a relationship between emotional intelligence and work engagement?
(4) Can emotional intelligence be developed?
(5) Are there any emotional intelligence development programmes that promote the development of emotional intelligence?

The research questions for the empirical study were formulated as follows:

(1) Will employees' levels of emotional intelligence increase following the participation of some in an emotional intelligence intervention?
(2) Will the employees' levels of work engagement increase following the participation of some in an emotional intelligence intervention?
(3) What is the significance of the relationships between individual components of emotional intelligence and work engagement before and after the participation of some employees in an emotional intelligence intervention?
(4) Will the levels of emotional intelligence predict the levels of work engagement?
(5) What recommendations can be made for the organisation regarding programmes to develop emotional intelligence?
(6) What are potential areas for future research in the field of industrial and organisational psychology regarding emotional intelligence and work engagement?

1.4 Aims

This section focuses on the general and specific research aims derived from the research questions as formulated in the previous section.

1.4.1 General aim

The general aim of this research was to use a controlled experimental research design to establish whether or not the participation of employees in an emotional intelligence intervention could increase their levels of emotional intelligence and thus improve their levels of work engagement.

The research design included the assessment of employees' emotional intelligence and work engagement levels both before and after an emotional intelligence intervention aimed at developing their levels of emotional intelligence.

The secondary aim of the study was to contribute to the existing body of research by replicating previous research on the relationships between the constructs of emotional intelligence and work engagement and the subcomponents of each of these constructs.

1.4.2 Specific aims

The specific aims included those for the literature review and those for the empirical study.

1.4.2.1 Aims of the literature review

The specific aims for the literature review were formulated as follows:

(1) To conceptualise the emotional intelligence construct and what it comprises from a theoretical perspective
(2) To conceptualise the work engagement construct and what it comprises from a theoretical perspective
(3) To determine whether or not there is a relationship between emotional intelligence and work engagement
(4) To determine whether or not the participation of employees in an emotional intelligence intervention can develop emotional intelligence
(5) To determine whether or not there are emotional intelligence development programmes that promote the development of emotional intelligence

1.4.2.2 Aims of the empirical study

The specific *empirical* aims for this study were formulated as follows:

(1) To assess the levels of emotional intelligence of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels have increased
(2) To assess the levels of work engagement of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels have increased
(3) To assess the significance of the relationships between the individual components of emotional intelligence and work engagement before and after the participation of some employees in an emotional intelligence intervention

(4) To determine whether or not the levels of emotional intelligence predict levels of work engagement
(5) To formulate recommendations for the organisation with regard to programmes aimed at developing emotional intelligence
(6) To suggest areas for future research in the field of industrial and organisational psychology regarding emotional intelligence and work engagement

The next section identifies the paradigms within which the researcher conducted the research.

1.5 Research paradigms

In this section, the researcher reviews some of the current theory on the research paradigms applicable to this study.

1.5.1 Introduction

Work engagement and emotional intelligence (and their subcomponents) form part of a number of theoretical constructs, and the nature and extent of the research fields, theory and research findings reviewed in this study depended on the particular research paradigm most applicable to this study.

Research paradigms are all-encompassing systems of interrelated practice and thinking that define the nature of the researcher's enquiry. In other words, the paradigms involve those things that researchers can take for granted about the social world they are studying and adopting the correct methods to study these things (Terre Blanche, Durrheim, & Painter, 2006).

These paradigms are organised according to the following three dimensions:
(1) *Ontology* specifies the nature of what is to be studied and what can be known about it – for example, a stable external reality in the case of the positivist paradigm.
(2) *Epistemology* specifies the nature of the relationship between the researcher

and what can be known – for example, as a detached observer in the case of the positivist paradigm or subjective in the case of the interpretive paradigm.

(3) *Methodology* specifies how researchers can study in practice whatever they believe can be known – for example, a quantitative (positivist paradigm) or qualitative (interpretive paradigm) study (Terre Blanche et al., 2006).

Terre Blanche et al. (2006) identified three types of specific research paradigms, namely the *positivist*, *interpretive* and *constructionist* paradigms.

The positivist paradigm gathers information about social facts in an objective and detached manner, often making use of quantitative indices (Terre Blanche et al., 2006).

If, for example, what is to be studied consists of stable and unchanging external realities (e.g. laws), then the researcher can adopt an objective and detached stance towards that reality and can employ a methodology that relies on control and manipulation of reality. This approach is referred to as positivist research and revolves around providing an accurate description of the laws and mechanisms operating in social life (Terre Blanche et al., 2006).

Interpretive and constructionist research, however, generally refers to an inductive research approach where the researcher starts with some idea about a research question and tries to make sense of the phenomenon by observing a set of particular instances (Terre Blanche et al., 2006).

The positivist research paradigm was deemed the most appropriate for this study because of its objectivity. This approach uses empirical testing to verify hypotheses and theories by applying *valid* and *reliable* instruments.

In the same way as paradigms exist to define the nature of an enquiry for researchers, there are also various theoretical paradigms in the field of psychology. The remainder of the chapter discusses paradigms such as

(1) positive psychology;

(2) industrial and organisational psychology;

(3) positive emotions and traits;
(4) positive organisational behaviour;
(5) positive organisational scholarship; and
(6) psychological capital.

1.5.2 Positive psychology

The field of *positive psychology* is developing rapidly, as evidenced in the prolific amount of research and number of books on aspects of it such as subjective well-being and positive psychological assessment (Bergh & Theron, 2009).

According to Seligman and Csikszentmihalyi (2000), positive psychology endeavours to change the focus of psychology from a pre-occupation with repairing the worst things in life to building and expanding on positive qualities.

The pre-occupation with mental illness focuses on the four D's approach (damage, disease, disorder and dysfunction) in an attempt to prevent poor performance, low motivation, unwell-being, ill health and disengagement (Bakker & Schaufeli, 2008). In contrast, organisations can elect to follow a more positive psychological approach to attract and retain engaged employees. This approach focuses on a wide range of positive elements.

Seligman and Csikszentmihalyi (2000) describe the *levels* of the field of positive psychology as follows:

(1) Valued experiences at the *subjective level* involve, say, well-being, contentment and satisfaction in the past, optimism and hope for the future, and happiness and flow in the present.
(2) Positive individual traits at the *individual level* include the capacity for love and vocation, courage, interpersonal skills, aesthetic sensibility, perseverance, forgiveness, future mindedness, originality, high talent, spirituality and wisdom.
(3) Civic virtues and institutions endeavour to move individuals to better citizenship at *group level,* involving responsibility, nurturance, civility, altruism, tolerance, moderation and work ethic.

The Positive Psychology Centre's (PPC) website supports the above, and states that positive psychology has three central concerns, namely positive *emotions*, positive individual *traits* and positive *institutions* (Seligman, 2007).

This study fits within the positive psychology framework because of its focus on positive elements as opposed to a focus on the negative elements like mental illness.

1.5.3 Industrial and organisational psychology

Industrial and organisational (I-O) psychology is a branch of psychology that utilises the assumptions and principles of psychology in the context of work in order to assess, utilise, develop and influence individual employees, groups and related organisational processes. I-O psychology is the scientific study of working and the application thereof in workplace issues facing individuals, teams and organisations, and it has adapted and developed its own identity (Bergh & Theron, 2009; Society for Industrial and Organizational Psychology, 2017).

I-O psychology recognises the interdependence of individuals, organisations and society and acknowledges the influence of factors on, say, the changing nature of work and careers on organisational and individual performance (University of South Africa, 2017).

This study ties in the I-O psychology framework because it was conducted in an organisational setting where employees participated in an emotional intelligence intervention.

1.5.4 Positive emotions and traits

Seligman (2007) posits that understanding *positive emotions* entails the study of contentment with the past, happiness in the present and hope for the future. To understand positive institutions, researchers have to study the strengths that foster

better communities, such as civility, justice, nurturance responsibility, parenting, work ethic, teamwork, purpose leadership and tolerance.

Research forms the base of a wide variety of selection tools in human resource management that focus on personality *traits* with demonstrated relationships with performance and attitudinal work outcomes. Trait-like character strengths also dominate positive psychology (Luthans, Youssef & Avolio, 2007).

Understanding positive individual traits involves the study of virtues and strengths, such as the capacity for love and work, resilience, courage, creativity, compassion, curiosity, self-knowledge, self-control, integrity moderation, and wisdom (Seligman, 2007).

Positive psychological traits, unlike genetically determined factors, manifest a degree of malleability, and individuals may be able to experience some growth and development as a result. These traits, however, tend to be difficult to develop and little change is likely in the short term. In today's environment, most long-term initiatives for creating or nurturing job-related talents, character strengths, positive virtues and other relatively stable traits are not cost effective or even possible in most instances (Luthans et al., 2007).

Positive emotions and psychological traits were applicable to the current study because malleability is required in organisations in order for learning and growth to occur. Organisational interventions would be futile if psychological traits were not malleable.

1.5.5 Positive organisational behaviour

The field of *positive organisational behaviour (POB)* emerged from positive psychology. POB, like positive psychology, does not claim to be a new discovery on the importance of positivity, but rather emphasises the need for theory building, research and effective application of *positive traits, states* and *behaviours* of employees in organisations (Luthans & Youssef, 2007).

According to Luthans (2002a) POB is the study and application of strengths and psychological capacities that are positively oriented and can be measured, developed and effectively managed for the improvement of performance in the workplace.

For a psychological strength to be included in the conception of POB, it should be positive and relatively unique to the field of organisational behaviour. Most importantly, it should meet the scientific criteria of being

(1) theory and research based;
(2) measurable;
(3) state-like or developmental; and
(4) related to work performance outcomes (Luthans et al., 2007).

Only positive psychological capacities that are state-like and therefore malleable are included in POB. Being *state-like,* as opposed to *trait-like,* opens up these capacities to development and improvement using relative brief training programmes and focusing on job activities (Luthans, Avey, Avolio, Norman, & Combs, 2006).

POB also studies the role of states such as self-efficacy, optimism, hope, resilience and other personal resources in coping with organisational demands and optimising performance (Bakker & Schaufeli, 2008).

POB appealed to the researcher in this study because of the limited time available to conduct interventions in some organisations and as a result require focus on strengths that can be developed and that relate to work outcomes.

1.5.6 Positive organisational scholarship

In addition to POB, researchers established the movement for *positive organisational scholarship (POS)*. POS focuses on the dynamics leading to exceptional individual and organisational performance, which may include the development of human strengths resulting in resilience. Cameron and Caza (2004, p. 731) define POS as

> [t]he study of that which is positive, flourishing, and life-giving in organisations. *Positive* refers to the elevating processes and outcomes in organisations. *Organisational* refers to the interpersonal and structural dynamics activated in and through organisations, specifically taking into account the context in which positive phenomena occur. *Scholarship* refers to the scientific, theoretically derived, and rigorous investigation of that which is positive in organisational settings.

POS is concerned with understanding the integration of positive and negative conditions and not merely the absence of the negative. It is imperative to consider the ways in which an individual interprets, manages and transforms the challenges to reveal the positive. POS is both inclusive and expansive. It represents a change of focus as opposed to a new invention. It recognises that studies of affirmative, uplifting and elevating processes and outcomes have not been the norm, even though positive phenomena have been studied for decades (Cameron & Caza, 2004).

POB and POS are both primarily concerned with the workplace and the accomplishment of work-related outcomes. This differs from positive psychology, which focuses on outcomes both inside and outside of work (Bakker & Schaufeli, 2008).

The difference between POB and POS is that the former is primarily concerned with *individual* psychological states (such as self-efficacy, optimism, hope and resiliency) and human strengths (Luthans, 2002a), whereas the latter primarily investigates positive deviance, or ways in which *organisations* and their members flourish and prosper in favourable ways (Cameron & Caza, 2004). POB focuses on the micro individual level, whereas in POS the focus is more on the macro organisational level.

Both POB and POS were deemed relevant to this study because of its focus on individual employees' ability to develop their levels of emotional intelligence, while the entire study would also have an impact on the organisation as a whole (POS).

1.5.7 Psychological capital

Certain positive psychological capacities may contribute more than other capacities to a high potential source of competitive advantage in combination and interaction. In a process to identify these, Luthans et al. (2007) classified some positive psychological capacities into four broadly defined categories, namely cognitive, affective, social and higher-order capacities. The psychological capacities that met Luthans et al.'s criteria for inclusion and contributed the most were self-efficacy, optimism, hope and resilience. These capacities are collectively referred to as *psychological capital* or *PsyCap.*

PsyCap is comprehensively defined as

> an individual's positive psychological state of development that is characterised by: (1) having confidence *(self-efficacy)* to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution *(optimism)* about succeeding now and in the future; (3) persevering towards goals and, when necessary, redirecting paths to goals *(hope)* in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond *(resiliency)* to attain success (Luthans et al., 2007, p. 3).

A number of other positive constructs were also assessed, based on the criteria for the PsyCap definition, but these constructs did not meet the requirements. These included the following:

(1) creativity and wisdom in the cognitive category;
(2) well-being, flow and humour in the affective category;
(3) gratitude, forgiveness, spirituality and *emotional intelligence* in the social category; and
(4) authenticity and courage in the higher-order category (Luthans et al., 2007).

Emotional intelligence has received the most attention in the practice of management of all of the factors of PsyCap (both the major four as well as the other potential factors). Emotional intelligence has almost become conventional wisdom, with few, if

any, tests of validation and has also received considerable criticism in the academic field of organisational behaviour (Luthans et al., 2007).

PsyCap was deemed the cut-off point for this study because emotional intelligence was considered for inclusion in PsyCap, but the construct did not meet all of the requirements. PsyCap was therefore not considered further in this study. The reason for the exclusion of emotional intelligence was the paucity of scientific research on the construct (Luthans et al., 2007). Hopefully this study will add to the body of scientific research.

1.6 Research design

1.6.1 Introduction

Terre Blanche et al. (2006) define research design as a strategic framework or plan that guides the research activity to ensure that the study draws sound conclusions.

The research questions, aims and paradigms identified above had an impact on the research design for this study. In the subsections below, this design is discussed in two parts, namely the research approach and the research method.

1.6.2 Research approach

According to Brewerton and Millward (2001), the design of a project pertains to the particular way in which hypotheses or questions are tested. The design is separated into the following three different levels of detail:

(1) At its broadest level, the researcher must decide whether the investigation is going to be largely *quantitative* or *qualitative,* or a combination of both.

(2) The researcher must then determine the actual design of the study. The study may be based on case studies (i.e. dealing in detail with a single organisational issue or sample), correlations (exploring relationships between factors within

an organisational setting) or experiments (examining differences between groups, over time or across situations).

(3) At the lowest level, the researcher must decide on how the "evidence" will be collected. This may include interviews, focus groups, surveys, experiments or field observation.

As noted above, the first choice a researcher has to make regarding methodology is whether the study is going to be quantitative or qualitative.

Quantitative research involves the use of statistical analysis to obtain findings, while qualitative research involves studies that do not attempt to quantify results through statistical summary or analysis. Qualitative studies typically involve interviews and observations without formal measurement (Marczyk, DeMatteo, & Festinger, 2005).

The researcher in the current study opted for a quantitative research design because a statistical analysis of the results of the emotional intelligence and work engagement assessments was conducted, and the results interpreted.

According to Marczyk et al. (2005), the design of a quantitative study is often based on *correlational* or *experimental research*.

The purpose of correlational research is to determine whether two or more variables are related, where a variable is anything that can take on different values such as weight, time, height and so forth. If a correlation between the two variables is strong enough, knowing about one variable allows a researcher to predict the other variable. However, correlation does not indicate causation. To draw a cause and effect conclusion, researchers have to use an experimental design (Marczyk et al., 2005).

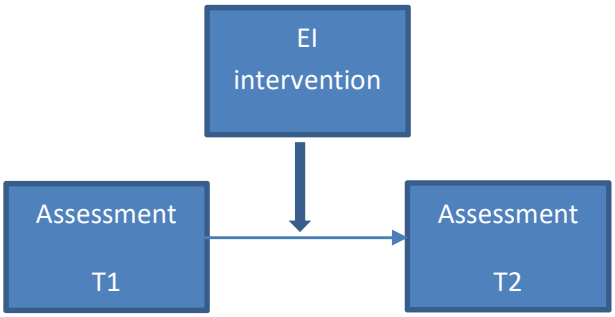
Experimental research involves comparing two groups on one outcome measure in order to test a hypothesis regarding causation. One of the groups is referred to as the experimental group, and is subjected to some kind of intervention, while the other (control) group is not subjected to an intervention. The researcher then compares the

results to see whether there is a difference in the results between the two groups (Marczyk et al., 2005).

The researcher could have selected the correlational design for this research because the study explores the relationships between factors in an organisation. However, he opted for an experimental design by examining the difference between two groups at two different time intervals, with one group participating in an emotional intelligence intervention.

The research design is depicted in figure 1.1 below.

GROUP A: EXPERIMENTAL GROUP



GROUP B: CONTROL GROUP

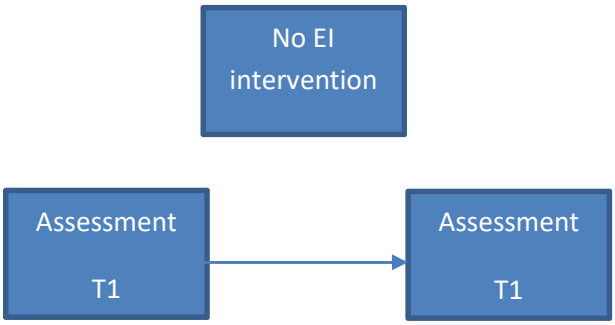


Figure 1.1. Quantitative Experimental Research Design used in this Study

The researcher selected the Genos EI instrument to assess the levels of emotional intelligence for both groups before and after the intervention. The Utrecht Work Engagement Scale (UWES) was used to assess the level of work engagement of employees before and after the intervention.

Experimental design requires two variables, namely the dependent and independent variables.

According to Terre Blanche et al. (2006), an independent variable produces an effect in a causal explanation. The independent variable in this study was the emotional intelligence construct. The study measured the levels of emotional intelligence at two intervals using an emotional intelligence assessment. The change in emotional intelligence levels was used as a benchmark to measure the changes in the dependent variable.

A dependent variable registers the effect of variation or manipulation in a research study (Terre Blanche et al*.,* 2006). The dependent variable in this study was the level of work engagement. The researcher assessed the variables at two intervals using a work engagement assessment and measured these changes against the changes in the independent variable.

The results of the emotional intelligence and work engagement assessments constituted the primary data that was used as a base to perform the data analyses.

The Genos Emotional Intelligence assessment and the Utrecht Work Engagement Scale were utilised in this study to assess emotional intelligence and work engagement respectively. Both of these instruments have been considered for validity and reliability in the South African context. The reliability and validity considerations are discussed in more detail in chapter 4.

Another consideration in research design is whether the study is going to be *nomothetic* or *idiographic.* A nomothetic approach refers to the study of groups to identify general laws that apply to a large group of people versus an idiographic approach, which entails the study of individuals (Marczyk et al., 2005).

The research approach adopted in this study was nomothetic as opposed to idiographic, because the study would depend on groups to identify general laws that apply to a larger group of people. The researcher would endeavour to generalise the findings to the population from which the sample was chosen.

1.6.3 Research method

Participants for the study were selected from a population of employees working in a medium-sized South African audit firm. The employees work in various business units that include assurance, advisory, tax, outsourcing and support services.

The emotional intelligence and work engagement assessments in this study were administered to both the experimental and control groups at two intervals. Both groups received the assessments at T1. After this initial assessment, the experimental group was exposed to an intervention over a period of one month. The intervention focused on the different emotional intelligence skills, but primarily on self-awareness and consisted of a training component conducted in a classroom/lecture style, followed by a period of self-study. The second series of assessments was conducted after the intervention.

All the participants in the experimental and control groups were measured immediately before and after the commencement of the intervention. The inference was that if the results showed a significant improvement in levels of emotional intelligence and work engagement observed between the first and second measurements for the experimental group, and no significant changes were evident for the control group, then this could be attributed to the intervention.

Various *methodological implications* should be considered in the use of an experimental research design. According to Babbie and Mouton (2002), whenever another factor besides the independent variable (in this case the emotional intelligence intervention) has an effect on the dependent variable, this can be regarded as a threat to the internal validity of the study. These implications should be regarded as possible limitations in the interpretation of the results of the study.

(1) *History* refers to specific events other than the intervention that could have occurred during the course of the experiment that would contaminate the results.

(2) *Maturation* refers to all biological effects that occur, because individuals

continually grow and change systematically, and these changes vary over time. Such changes may affect the results of an experiment.

(3) *Testing* refers to the process of testing and retesting, which often influences the individuals' behaviour, thereby influencing the results of the experiment.

1.7 Chapter layout

This section explains the layout of the chapters in this dissertation, which deal with emotional intelligence, work engagement and its theoretical integration with emotional intelligence, the research design, research results and conclusions, limitations and recommendations.

Chapter 2: Emotional intelligence

The aim of this chapter is to provide a detailed overview of the concept of emotional intelligence, and where this construct fits into the paradigms of positive psychology and industrial and organisational psychology. Various models of emotional intelligence are reviewed, including Mayer and Salovey's model, the Swinburne University Emotional Intelligence Test and the Genos EI model.

Chapter 3: Work engagement and theoretical integration

The aim of this chapter is to provide a detailed overview of the concept of work engagement and where this construct fits into the paradigms of positive psychology and industrial and organisational psychology. The Utrecht Work Engagement Scale (UWES) is reviewed and the construct of work engagement distinguished from other constructs such as organisational commitment.

The chapter also deals with the theoretical integration of the two emotional intelligence and work engagement constructs by using the Job Demands-Resources Model.

Chapter 4: Quantitative research design

This chapter explains the research design and hypotheses, followed by a review of the research instruments used. The researcher describes the emotional intelligence development intervention and the tools used to evaluate the results. The quantitative research process, the specific strategy or steps followed in the design, sampling, data collection, and analysis to improve the internal and external validity of the research, are also outlined.

Chapter 5: Research results

This chapter deals with the results of the study and explains the findings and relationships between the dependent and independent variables. The focus is on an integrated examination of the empirical evidence obtained from the research.

Chapter 6: Conclusions, limitations and recommendations

The final chapter contains a discussion of the results and the conclusions drawn. Recommendations for the organisation involved in the study are formulated, and suggestions made for possible further research.

1.8 Chapter summary

This chapter discussed the background to and problem statements in the study. The researcher also briefly explained the research aims and paradigms that would have an impact on the research design. The next chapter reviews the theoretical construct of emotional intelligence.

CHAPTER 2: EMOTIONAL INTELLIGENCE

2.1 Introduction

Chapter 2 discusses the background to the emotional intelligence construct and provides a literature review of recent research, definitions, dimensions and appropriate models and measures of emotional intelligence.

The construct of emotional intelligence is becoming increasingly transparent, but there is a need for further research to understand the interaction between individuals and the organisation as well as the development of emotional intelligence (Dulewicz & Higgs, 1999).

According to Gardner (1983), central to the cognitive abilities argument is the experience of the individual and the environment that allows these “abilities” to develop.

There are also some misconceptions about emotional intelligence. Emotional intelligence does not mean merely being nice and it sometimes demands the exact opposite, being confrontational. It also does not involve giving free rein to one’s feelings – instead, it means managing one’s feelings so that they are expressed appropriately and effectively to enable people to work together (Goleman, 1998).

In an organisational context it has been proven that emotional intelligence has a signficant impact on the organisation in areas such as psychological contract breach. A study conducted by Balogun, Oluyemi, and Afolabi (2018) confirmed that employees who experience psychological contract breach are more likely to experience feelings of betrayal, frustration and resentment, resulting in potential deviant behaviour in the workplace. In Balogun et al.’s study, employees with higher emotional intelligence reacted less to psychological contract breach and showed lower tendencies to engage in deviant behaviour. This finding suggests that emotional intelligence is a key factor that can buffer certain negative effects, and suggests the need for interventions aimed at increasing emotional intelligence levels among employees (Balogun et al., 2018).

The researcher will review some of the definitions of emotional intelligence in order to understand the construct further.

2.2 Definition

Goleman (1998) described emotional *competence* as a learnt capability based on emotional intelligence that results in outstanding performance at work. At the heart of this competence are two *abilities*, namely empathy and social skills. The former involves reading one's feelings, while the latter allows the artful handling of those feelings. Our emotional *intelligence* determines our potential for learning the practical skills that are based on five elements, namely self-awareness, self-management, self-motivation, empathy, and social skills or adeptness in relationships.

The Bar-On model, which forms the theoretical base for the Emotional Quotient Inventory (EQ-i), defines "emotional and social intelligence" as "a cross-section of inter-related emotional and social competencies that determine how effectively we understand and express ouselves, understand others and relate to them, and cope with daily demands and pressures" (Bar-On, 2004, p. 117).

Fast forward to 2018, and this definition has been somewhat amended to state that emotional intelligence is that aspect of human intelligence that governs our ability to recognise, understand, control and use our emotions in solving problems of a personal and interpersonal nature (Bar-On, 2018).

Mayer, Roberts, and Barsade (2008) came up with the idea of emotional self-management. This area grew out of clinical findings that one's emotionality can become more positive by reframing our perceptions of situations (Beck, Rush, Shaw, & Emery, 1979, as cited in Mayer et al., 2008), as well as the idea that individuals exert considerable emotional self-control when at work (Hochschild, 1983, as cited in Mayer et al., 2008).

Mayer et al. (2008, p. 511) formulated an initial working description of emotional intelligence as “the ablity to carry out accurate reasoning about emotions and the ability to use emotions and emotional knowledge to enhance thought”.

Gignac (2010, p. 1) defined emotional intelligence as “the ability to purposely adapt, shape and select environments using emotionally relevant processes”.

The researcher considered the last definition to be the most fitting for this study as an independent variable is required that has the ability to be adapted and shaped on purpose in a selected environment such as an accounting firm.

The next section reviews the various dimensions of emotional intelligence.

2.3 Dimensions of emotional intelligence

Caruso (2004) contrasted various models of emotional intelligence and categorised them into the following three main theoretical approaches:

(1) *Ability* models define emotional intelligence as a conceptually related set of mental abilities relating to emotions such as the ability to understand one’s own emotions, as explained by Mayer and Salovey (1997).

(2) *Trait* models define emotional intelligence as an array of socioeconomic traits such as assertiveness (Bar-On, 1997).

(3) *Competency* models comprise a set of emotional competencies defined as learnt capabilities based on emotional intelligence such as influence, which is the wielding of effective tactics for persuasion (Goleman, 2001b; Palmer, 2007).

Research also found that there is a clear disconnect between a person’s knowledge and how he or she applies that knowledge in practice (Palmer, 2007). Tatton (2005), for example, defined the following five distinct categories of emotionally intelligent people:

(1) *The emotionally intelligent.* These are individuals with high levels of emotional knowledge who demonstrate the effective use of that knowledge.

(2) *The emotionally intuitive.* These individuals have low levels of emotional knowledge, but effectively apply emotional intelligence in role-play.

(3) *The emotionally negligent.* These individuals have high levels of emotional knowledge, but are unable to effectively apply that knowledge and miss emotional cues in role-play.
(4) *The emotionally manipulative.* These individuals have high levels of emotional knowledge, and they use this knowledge in despicable ways in role-play to, say, lower others' self-esteem.
(5) *The emotionally unintelligent.* These individuals have emotional knowledge and do not demonstrate effective use of emotional intelligence by, say, missing others' emotional cues.

According to Gignac (2010), *models* describe the number and nature of dimensions measured by a psychometric inventory. Although initially popularised by Goleman (1995), the concept of emotional intelligence has become a somewhat confusing area for managers and practitioners because of the number of models found in literature. Although the term "emotional intelligence" collectively refers to all of these models, they can represent different perspectives on what should be included in the concept. This gives rise to noticeably different definitions and measurement criteria of emotional intelligence, and despite using the same term, authors often measure extremely different things, including the predictive power of the construct to explain behaviour in work settings (Clarke, 2010).

In the next subsection, the various models of emotional intelligence are considered.

2.3.1 Bar-On's model: Emotional intelligence as a non-cognitive trait

The EQ-i model includes five dimensions, namely intrapersonal skills, interpersonal skills, adaptability, stress management and general mood. The table below presents the theoretical framework for the Bar-On (1997) model, which indicates the 15 subscale scores:

Table 2.1
Non-cognitive Model of Emotional Intelligence (Bar-On, 1997, as cited in Bar-On, 2004, p.141)

EQ-I scales	Emotional intelligence competencies assessed by each scale
Intrapersonal	Self-awareness and self-expression:
Self-regard	*To accurately perceive, understand and accept oneself*
Emotional self-awareness	*To be aware of and understand one's emotions*
Assertiveness	*To effectively and constructively express one's emotions and oneself*
Independence	*To be self-reliant and free of emotional dependency on others*
Self-actualisation	*To strive to achieve personal goals and actualise one's potential*
Interpersonal	Social awareness and interpersonal relationship:
Empathy	*To be aware of and understand how others feel*
Social responsibility	*To identify with one's social group and cooperate with others*
Interpersonal relationship	*To establish mutually satisfying relationships and relate well with others*
Stress management	Emotional management and regulation:
Stress tolerance	*To effectively and constructively manage emotions*
Impulse control	*To effectively and constructively control emotions*
Adaptability	Change management:
Reality testing	*To objectively validate one's feelings and thinking with external reality*
Flexibility	*To adapt and adjust one's feelings and thinking to new situations*
Problem solving	*To effectively solve problems of a personal and interpersonal nature*
General mood	Self-motivation:
Optimism	*To be positive and look at the brighter side of life*
Happiness	*To feel content with oneself, others and life in general*

The researcher decided not to select this model for this study because emotional intelligence is regarded as a non-cognitive trait. Being trait-like as opposed to state-

like closes off some opportunities to develop and improve emotional intelligence levels using relatively the brief training programmes in this study.

2.3.2 Mayer and Salovey's model: Emotional intelligence as an ability

Mayer, Caruso, and Salovey (2000) argued that emotional intelligence does indeed describe actual *abilities* rather than preferred courses of behaviour. These four broad classes of abilities can be arrranged from lower, more molecular, skills to higher more molecular skills as depicted in figure 2.1 below:

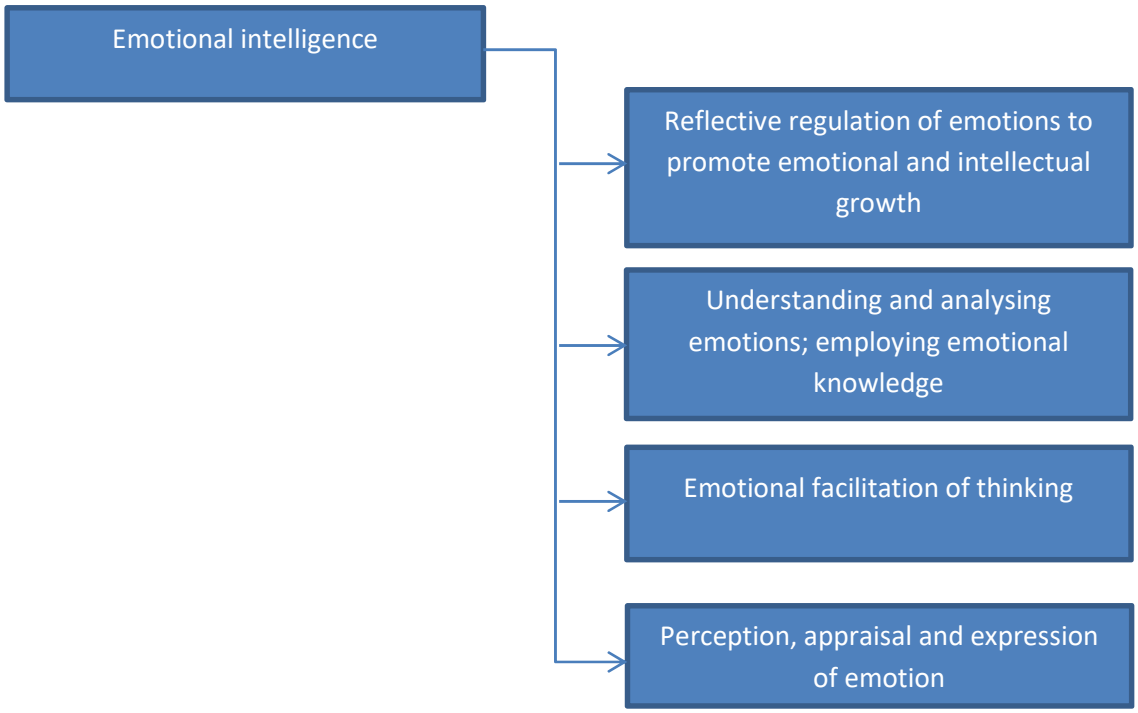


Figure 2.1. A Four-branch Model of Skills involved in Emotional Intelligence, adapted from Mayer and Salovey (1997, p. 11)

The lowest level set of skills involves the perception and appraisal of emotion, in a facial expression, for example. The next level assimilates basic emotional experiences into mental life and includes weighing emotions against one another and against other sensations and thoughts, and allowing emotions to direct attention. An example includes holding an emotional state in consciousness long enough to compare its correspondences to similar sensations in sound, colour and taste. The third level involves understanding and reasoning about emotions. Each emotion (happiness,

anger, fear, etc.) follows its own specific rules. Anger, for instance, rises when justice is denied. Each emotion moves according to its own characteristic rules, like different pieces on a chessboard. Emotional intelligence involves that ability to see the pieces, know how they move and reason about emotions accordingly. The fourth and highest level involves the management and regulation of emotion, such as knowing how to calm down after feeling angry or being able to alleviate the anxiety of another person (Mayer et al., 2000).

The researcher decided against this model because emotional intelligence is seen as an ability, and this view is not suitable for short-term development in organisations where all employees might lack this ability.

2.3.3 Goleman's model: Emotional intelligence as a competency

Goleman's (1998) model expanded on Mayer and Salovey's (1997) initial definition, by incorporating personal and social competencies. The model, however, differs significantly from that of Mayer and Salovey (1997) in that the latter defined emotional intelligence as an ability, whereas Goleman defined it as an competency. There is also a signficant focus on emotional intelligence as an application in the workplace.

Table 2.2 depicts Goleman's (2001b) model of emotional intelligence.

Table 2.2
Model of Emotional Intelligence (Goleman, 2001b, p. 28)

	Self **(Personal competence)**	**Other** **(Social competence)**
Recognition	*Self-awareness* • Emotional self-awareness • Accurate self-assessment • Self-confidence	*Social awareness* • Empathy • Service orientation • Organisational awareness
Regulation	*Self-management* • Emotional self-control • Trustworthiness • Conscientiousness • Adaptability • Achievement drive • Initiative	*Relationship management* • Developing others • Influence • Communication • Conflict management • Visionary leadership • Catalising change • Building bonds • Teamwork and collaboration

Goleman regarded emotional intelligence as a competency, and this stance appealed to the researcher because it is suited to modern organisations and implies that emotional intelligence, like other competencies, can be learnt. However the reasearcher decided against this model because a more recent model was designed by Genos EI, which is also supported by learning material to increase emotional intelligence.

2.3.4 The Swinburne University Emotional Intelligence Test and the Genos EI

The researcher selected the Genos model of emotional intelligence, which is largely based on a factor analytic study aimed at determining a taxonomic model for the construct. It is also based on the factor analyses by Gignac (2005) of the Swinburne University Emotional Intelligence Test (SUEIT) (Palmer & Stough, 2001). The SUEIT is an inventory designed to measure the original five-factor taxonomic model of emotional intelligence identified by Palmer. The Genos model of emotional intelligence comprises a general factor (or total emotional intelligence) decribed by seven orthogonal factors, as outlined below (Palmer, Stough, Harmer, & Gignac, 2009):

Table 2.3
Genos EI Model of Emotional Intelligence, adapted from Gignac (2010, p. 16)

SUEIT	GENOS EI	Description of dimension
Recognition & expression	Emotional self-awareness (ESA)	The skill of perceiving and understanding your own emotions.
	Emotional expression (EE)	The skill of effectively expressing your own emotions.
Understanding emotions external	Emotional awareness of others (EAO)	The skill of perceiving and understanding others' emotions.
Emotions direct cognition	Emotional reasoning (ER)	The skill of using emotional information in decision making.
Emotional management	Emotional self-management (ESM)	The skill of managing your own emotions.
	Emotional management of others (EMO)	The skill of positively influencing the emotions of others.
Emotional control	Emotional self-control (ESC)	The skill of effectively controlling your own strong emotions.

Although a typical emotional intelligence performance perspective underpins the Genos EI model, it is not considered to be a mixed model. A mixed model is traditionally conceived as a combination of emotional intelligence dimensions and non-emotional intelligence dimensions (e.g. those of personality). The view with the Genos EI is not to incorporate psychological variables that do not have direct relevance to the identification, utilisation and/or management of emotions (Gignac, 2010).

A revised 70-item version of the SUEIT was designed by Palmer and Stough to measure the dimensions of emotional intelligence, as described in the Genos EI model (Gignac & Genos, 2009).

The self-report sample of 4 775 participants, of whom 52.9% were female, included participants from Australia (60.5%), South Africa (8.8%), the USA (7.8%), Hong Kong (4.6%), Singapore (3.9%), India (3.6%) and the United Kingdom (UK) (2.0%). The sample of 6 848 participants who were rated were residents in similar percentages to those who participated in the self-report studies. All those who participated in the self-report study participated in the rater report study (Gignac & Genos, 2009).

According to Genos, the Genos EI seven-factor model is an ideal and empirically justifiable model of emotional intelligence (Gignac, 2010).

The researcher concurred with this statement – hence his use of the Genos EI model and inventory in this study. The Genos EI model was deemed the most appropriate for this study because emotional intelligence is seen as a skill that can be improved on with training.

2.4 Measures of emotional intelligence

There are a number of measures of emotional intelligence. The most established and supported are the Bar-On Emotional Quotient Inventory (EQ-i) (Bar-On, 1997) and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) Version 2.0 (Mayer, Salovey, & Caruso, 2001).

Researchers in the area of the measurement of emotional intelligence distinguish between the following types of measures:

(1) ability measures;
(2) self-and-rater report mixed measures;
(3) self-report trait measures; and
(4) self-and-rater report competency measures (Palmer et al., 2009).

Reuven Bar-On was the first researcher who attempted to assess emotional intelligence in terms of a measure of well-being. In his doctoral thesis, he used the

term “emotional quotient” long before it had gained popularity as a name for emotional intelligence (Goleman, 2001a).

According to Luthans et al. (2007), the Bar-On primarily defines emotional intelligence in terms of adaptive personality *traits*, while Salovey, Mayer, Caruso, and Lopes (2003) supported the developmental nature of emotional intelligence as a set of learnable abilities or *states*.

The MSCEIT uses a variety of interesting and creative tasks to measure individuals’ capacity for reasoning with emotional information by directly testing their ability. This ability-based model makes the test ideal for situations in which the respondents may want to create a positive impression or “fake good” (JVR Psychometrics, 2013). The instrument is intended to measure the following four branches or group of skills of emotional intelligence:

(1) perceiving emotion accurately;
(2) using emotion to facilitate thought;
(3) understanding emotion; and
(4) managing emotion (Mayer & Salovey, 1997).

The Genos EI is a 70 item multirater assessment designed as a learning and development aid in the workplace. It does not measure emotional intelligence as such, but rather how often people display 70 emotionally intelligent workplace behaviours that represent emotional intelligence in the workplace (Palmer et al., 2009).

The Genos EI was first published as the Swinburne University Emotional Intelligence Test (SUEIT) (Palmer & Stough, 2001) and has since appeared in a number of research journals.

Palmer (2007) postulated that as a best practice approach, a measure should be selected to incorporate emotional abilities, preferences and styles and behaviours. It was suggested that the following practical criteria also be applied when selecting one approach over the other:

(1) face validity in that the emotional intelligence measure shortlisted has the most appropriate overlap with the variables it assesses and the attributes required to

perform the role successfully;

(2) cost;

(3) time to complete;

(4) ease of use;

(5) interpretation reports; and

(6) support products and services.

Palmer et al. (2009) stated that there was a need in the workplace to develop an emotional intelligence inventory that would:

(1) measure a simple rather than complex model;

(2) be able to be completed within 15 minutes;

(3) have high workplace validity in that it would clearly relate to workplace activities; and

(4) generate scores that were meaningfully related to organisational and role specific outcomes such as attrition, job performance and leadership effectiveness.

Palmer et al. (2009) also asserted that an ideal emotional intelligence inventory's feedback report would present to an individual his or her assessment results in the context of workplace performance outcomes. These would be in combination with a series of targeted and individually focused emotional intelligence development options that were relevant to applying emotional intelligence in the work place.

The Genos EI focuses on the measurement of the frequency or typicality with which an individual may exhibit certain emotionally intelligent behaviours. The reason for this focus is the belief that organisations are more interested in how an individual typically behaves in the workplace rather than a once-off demonstration of maximum capacity (Gignac, 2010).

Ability measures are designed to assess individual differences in emotional abilities, as described in Mayer, Salovey, and Caruso (2000). An example of an instrument is the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). Palmer et al., (2009) argued that this instrument lacks workplace face validity and takes too long to complete (about 30 minutes).

The EQ-i (Bar-On, 1997) is an example of a self-and-rater report, and Palmer et al., (2009) felt that the instrument with its 133 items also takes too long to complete. The model of emotional intelligence that it assesses was also considered to be too complex.

An example of a self-report trait measure is the Trait Emotional Intelligence Questionnaire (TEIQue) (Petrides & Furnham, 2001), which Palmer et al. (2009) also criticised for being too long, with 153 items and trait-based assessments that lack workplace face validity in that they are more concerned with individual preferences and styles rather than what people actually do in the workplace.

One leading assessment of emotional intelligence that was designed specifically for the workplace and meets most of the requirements as determined by Palmer et al. (2009) is the Emotional Competency Inventory (ECI) developed by the Hay Group in partnership with Goleman and Boyatis (Sala, 2002). A criticism, however, was that the ECI, like the Bar-On EQ-I, also measures an emotional intelligence model that is too complex.

An ideal instrument should assess typical performance rather than maximal performance, which has been identified as one of the principal advantages of a self-report measure of emotional intelligence (Gignac, Palmer, Manocha, & Stough, 2005).

Researchers have continued to determine which measurement approach is more predictive of outcome variables such as social functioning and coping styles, in an attempt to provide insight into which approach offers the most utility in the workplace. These studies have been fairly inconclusive and have typically compared one or more self-report trait measures of emotional intelligence with a performance-based measure (Palmer, 2007).

Performance-based measures of emotional intelligence measure the extent to which one's emotional ability of knowledge underlies or predicts social functioning. In contrast, a self-report trait measure of emotional intelligence measures the extent to which one's emotional self-efficacy underlies or predicts social functioning. When

comparing the two approaches, one of them may appear to be more predictive than the other (Palmer, 2007).

The Genos EI has the following three unique features:

(1) The taxanomic seven-factor model that it assesses is simple in comparison with some of the larger models used in practice.
(2) It has workplace face validity comprising items that represent emotionally intelligent workplace behaviours aligned to the seven factors of the model.
(3) It is not a measure of emotional intelligence as such, but a measure of typical rather than maximal performance. It specifically measures individual differences in how often people demonstrate emotionally intelligent workplace behaviours (Palmer et al., 2009).

Gignac and Genos (2009) evaluated the factorial validity and internal consistency of the 70-item workplace relevant Genos EI by means of confirmatory factor analysis based on self-report and rater-report data.

Self-report and rater-report measures of emotional intelligence are deemed useful because they have been designed to assess typical performance as opposed to maximal performance. This distinction is significant because the perception is that organisations would be more interested in the assessment in typical performance when it comes to assessing an employee's performance (Gignac et al., 2005).

2.5 Chapter summary

This chapter dealt with the construct of emotional intelligence. It also considered the components of emotional intelligence and briefly highlighted various models. The Genos EI model was deemed to be the most appropriate for this study as emotional intelligence is seen as a skill that can be improved with training. The model is acceptably readable, applies to a wide age range and does not take too long to complete.

The next chapter covers the literature review of the work engagement construct as well as the theoretical integration of emotional intelligence and work engagement using the Job Demands-Resources Model.

CHAPTER 3: WORK ENGAGEMENT AND THEORETICAL INTEGRATION

3.1 Introduction

Advances in efficiency and quality in organisations occur through new ideas, which compel organisations to recruit and inspire employees to utilise their full capabilities at work. Organisations require dedicated and energised employees, and work engagement can offer organisations this competitive advantage (Leiter & Bakker, 2010).

This chapter provides an overview of work engagement as a construct and covers a literature review of related constructs such as personal engagement, burnout and employee engagement. It also focuses on the definitions and dimensions of work engagement, and an appropriate model of work engagement.

3.2 Definition

The term “engagement” in a work context was first coined in organisation psychology and business literature in the 1990s (Simpson, 2009).

Work engagement in particular refers to a positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption (Schaufeli, Salanova, Gonzalez-Roma, & Bakker, 2002).

Schaufeli and Bakker (2003, p. 4) defined work engagement in the Utrecht Work Engagement Scale (UWES) preliminary manual as follows:

> Engagement is a positive, fulfilling, work-related state of mind that is characterised by vigor, dedication and absorption. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual or behaviour. Vigor is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work and persistence even in the face of difficulties. Dedication refers to being

> strongly involved in one's work experiencing a sense of significance, enthusiasm, inspiration, pride and challenge. Absorption is characterised by being fully concentrated and happily engrossed in one's work whereby time passes quickly and one has difficulties with detaching oneself from work.

The term "engagement" has gained popularity in organisations and academia alike. According to Schaufeli and Bakker (2010), the exact origin of the term "employee engagement" is not clear, but it is often used interchangebly with "work engagement". These authors preferred the term "work engagement", and although the above definition refers to engagement, it is intended to describe work enagement as well.

This definition that work engagement is characterised by vigour, dedication and abosorption was adopted in this study because it also forms the basis of the UWES, which is the instrument utilised in this study.

The proposed link between emotional intelligence and work engagement is discussed in more detail later on in this chapter, where the Job Demands-Resources Model (Bakker & Demerouti, 2007) is reviewed. The fact that the components of work engagement described in the above definition are also used in the Job Demands-Resources Model, lent further support to the use of this definition.

3.3 Dimensions of work engagement

Engagement has become a popular term in consulting and organisations, and more recently in academia (Schaufeli & Bakker, 2010). A number of authors (Macey & Schneider, 2008; Saks, 2006) have contended that work engagement has been used as a marketing tool by consulting organisations wishing to unlock value for organisations, and that more research is necessary in academia.

Simpson (2009) reviewed research on engagement in general and identified the following four areas focusing on engagement in the employee's work life:

(1) personal engagement (Kahn, 1990)*;*
(2) burnout/engagement (Leiter & Maslach, 2004; Maslach & Leiter, 1997);
(3) employee engagement (Harter, Schmidt, & Hayes, 2002)*;* and

(4) work engagement (Schaufeli et al., 2002).

Although the focus of this study was on work engagement, it was deemed necessary to examine other related approaches in order to gain a better understanding of the concept. All of the above constructs are discussed in more detail below.

The first construct identified by Simpson (2009) is personal engagement. Personal engagement is defined as "the harnassing of organisation members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (Kahn, 1990, p. 694).

According to Kahn (1990, p. 694) personal disengagement is "the uncoupling of selves from work roles; in disengagement, people withdraw and defend themselves physically, cognitively, or emotionally during role performances".

Kahn (1990) was the first researcher to refer to the concept of *personal engagement,* and with this, the opposite of personal disengagement. Kahn (1990) asserted that constructs such as organisational commitment, job involvement and intrinsic motivation are too far removed from an employees' day-to-day work life. Personal engagement and disengagement as concepts integrate the idea that people need both self-expression and self-employment in their work lives as a matter of course.

Kahn (1990) further described personal engagement as the expression of a person's "preferred self" in task behaviours that promote connections to work and to others, personal presence (physically, cognitively and emotionally) and active and full role performances. Hence an engaged employee is emotionally connected, cognitively vigilant and physically involved.

Three psychological conditions were found to have an impact on an individual's personal engagement and disengagement at work, namely *meaningfulness, safety,* and *availability* (Simpson, 2009). Meaningfulness is understood to be a feeling that one will receive a return on investment in one's work role performances. Safety is regarded as a sense of being able to show and employ oneself without fear of negative

consequences to one's self-image or status at work, while availability is described as a sense of possessing the physical, emotional and psychological resources needed for investing oneself in the work role (Simpson, 2009).

Employees who display personal engagement put a lot of effort into their work because they identify with it (Schaufeli & Bakker, 2010). The key reference regarding personal engagement, as described by Kahn (1990), is the work *role*. The next construct considers engagement as the positive antithesis of burnout, and the key reference here is the work *activity* or the work itself (Schaufeli & Bakker, 2010).

According to Maslach and Leiter (1997), the engagement component in *burnout/engagement* is characterised by energy, involvement and efficacy – the direct opposites of the three burnout dimensions. They described burnout as a psychological syndrome characterised by exhaustion, cynicism and inefficacy, which is experienced in response to chronic job stressors. Conversely, engagement is understood to be the direct opposite of burnout and exists on a continuum, with engagement at the one end and burnout at the other. Exhaustion (low energy), cynicism (low involvement) and inefficacy (low efficacy) are characteristics of burnout, whereas high efficacy is a characteristic of engagement.

Schaufeli and Bakker (2004) conducted a study focusing on burnout and its opposite, engagement. The study found that negative psychological states (i.e. burnout) and positive psychological states (i.e. engagement) play similar roles in quite different processes. Job demands and a lack of job resources predicted burnout while job resources predicted engagement.

The third construct identified by Simpson (2009) is employee engagement.

According to Harter et al. (2002), employee engagement occurs when individuals are emotionally connected to others and cognitively vigilant, and they referred to employee engagement as the individual's involvement, satisfaction and enthusiasm for work.

Saks (2006) suggested that the definition and meaning in the practitioner literature often overlap with other constructs, but in academic literature engagement has been

defined as a construct that consists of cognitive, emotional and behavioural components that are associated with individual role performance. In addition, engagement is distinguishable from related constructs such as organisational commitment, job involvement and organisational citizenship (Saks, 2006).

Studies on engagement add to one's understanding of positive organisational processes and the relevance thereof in organisational outcomes. Employee engagement is therefore a promising new avenue for future POB research (Bakker & Schaufeli, 2008). Researchers have thus linked employee engagement as a construct to various positive outcomes for organisations such as academic performance and organisational commitment (Bakker & Schaufeli, 2008).

Researchers have also described various approaches to employee engagement. Firstly, it is considered to be a set of motivating resources, which may include support and recognition from co-workers as well as performance feedback. Secondly, employee engagement is conceptualised in terms of the commitment and extra-role behaviour. This involves, for instance, a psychological state in which employees feel a vested interest in the company's success and perform to a high standard that may exceed the stated requirements of the job. They also experience personal satisfaction and a sense of inspiration and affirmation in their work and being part of the organisation. The third approach defines engagement independently from job resources and positive organisational outcomes (such as commitment) as a positive, fulfilling, affective-motivational state of work-related well-being that is the antipode of job burnout (Bakker & Schaufeli, 2008).

Macey and Schneider (2008) expanded on the view of Saks (2006) by suggesting that the meaning of employee engagement is ambiguous among practitioners and academic researchers. Macey and Schneider (2008), posited that the term is used at different times to refer to psychological states, traits and behaviours, as well as their antecedents and outcomes.

According to Macey and Schneider (2008), there are numerous definitions of employee engagement in the literature. A common feature of these definitions is that

employee engagement has both attitudinal and behavioural components with an organisational purpose, and suggests, inter alia, energy, commitment and focused effort.

Nienaber and Martins (2014) noted that employee engagement is a major contributor to an organisation's competitive advantage and that there are different conceptualisations, measures and explanations of engagement. Engagement is described as an elusive concept as it is argued that employee engagement and work engagement are treated in the same way by most researchers (Schaufeli & Salanova, 2011).

Schaufeli and Salanova (2011) distinguised between work and employee enagement and noted that work engagement refers to the employee's relationship with his or her work, whereas employee engagement is a broader concept and may also include the relationship with the employee's professional or occupational role and with his or her organisation (Schaufeli & Salanova, 2011).

The fourth construct identified by Simpson (2009) in her literature research is work engagement. Schaufeli et al.'s (2002, p 74) definition of work engagement, which explains engagement as a positive, fulfilling and work-related state of mind that is characterised by *vigour* (high activation)*, dedication* (high identification) and *absorption,* was adopted in this study.

Vigour, as an element of engagement, is characterised by high levels of energy and mental resilience while working, the willingness to invest effort in one's work and persistence even in the face of difficulties. Dedication is characterised by a sense of significance, enthusiasm, inspiration, pride and challenge. Absorption is characterised by being fully focused and happily engrossed in one's work, whereby time passes quickly and one has difficulty detaching oneself from work. Being fully absorbed comes close to what has been referred to as "flow". However, flow is a more complex concept that includes many elements and refers to particular short-term peak experiences instead of a more pervasive and persistent state of mind as in the case of engagement (Schaufeli et al*.,* 2002).

By contrast, burnout has been characterised as a combination of *exhaustion* (low activation), *cynicism* (low identification) and *reduced professional efficacy*. While elements of burnout and engagement (exhaustion vs vigour and dedication vs cynicism) are direct opposites, reduced efficacy and absorption are not. Schaufeli et al. (2002) therefore considered burnout and engagement to be opposite concepts that should be measured independently by using different instruments.

The characteristics of this definition have also been used in describing work engagement in the Job Demands-Resources Model (Bakker & Demerouti, 2007).

It should be noted that work engagement is different to addiction to work. Engaged workers enjoy their work as well as other activities outside of work and, unlike workaholics, they do not work hard because of a strong and irresistible inner drive, but because work is fun (Bakker & Demerouti, 2008).

Leiter and Bakker (2010) described work engagement from a motivational perspective and emphasised that engaged employees are energised and strive towards challenging goals.

Burke, Koyuncu, Fiksenbaum, and Tekin (2013) reported that employees with higher levels of work engagement were generally more work satisfied, engaged in more empowered voice behaviour, were less likely to quit and indicated lower levels of work-family and family-work conflict. Work engagement was associated with more favourable individual and organisational outcomes.

In order to consider work engagement as a valid contribution to this research field, it was also deemed necessary to establish the ability of the construct to distinguish itself from other adjacent constructs.

3.4 Measures of work engagement

The most commonly used instrument to measure work engagement is the Utrecht Work Engagement Scale (UWES). This is a self-report instrument that has been

validated in many countries across the world (Bakker, Schaufeli, Leiter, & Taris, 2008). The UWES includes items for the assessment of three engagement dimensions included in Schaufeli et al.'s (2002) definition, namely vigour, dedication and absorption.

Vigour is assessed by items that refer to high levels of energy and resilience, the willingness to invest effort, not being fatigued and persisting in the face of difficulties. Those who score high on vigour usually have more energy, zest and stamina when working, whereas those who score low on vigour have less energy, zest and stamina in their work (Schaufeli & Bakker, 2003).

Dedication is measured by items that refer to deriving a sense of significance from one's work, feeling enthusiastic and proud about one's job, and feeling inspired and challenged by it. Those who score high on dedication identify strongly with their work because they experience it as meaningful, inspiring and challenging. They usually feel enthusiastic about and proud of their work. Those who score low do not identify with their work because they do not experience it as meaningful, inspiring and/or challenging. They feel neither enthusiastic about nor proud of their work (Schaufeli & Bakker, 2003).

Absorption is measured by items that refer to being totally and happily immersed in one's work and having difficulty detaching oneself from it, to the extent that time passes quickly and one forgets about everything else around one. Those who score high on absorption feel that they are usually happily engrossed in their work, feel immersed in their work and have difficulty detaching from it because it carries them away. Consequently, everything else around them is forgotten and time seems to fly. Those who score low on absorption do not feel engrossed or immersed in their work, they not have difficulty detaching from it and they do not forget everything around them, including time (Schaufeli & Bakker, 2003).

Rothmann and Storm (2003) conducted research in the South African Police Service and concluded that further research is required in other occupations in South Africa to establish norms for engagement levels.

Owing to the diverse landscape of South Africa, it is necessary to measure work engagement levels scientifically, and because South African research frequently uses or cites the UWES, it is necessary for the instrument to measure work engagement in different South African cultural groups both validly and reliably (Goliath-Yarde & Roodt, 2011). Since the sample consisted of groups with different cultural backgrounds, mother tongues and levels of education, the appropriateness of item content and poor understanding of items content might have been a problem in the South African context.

Wefald, Mills, Smith, and Downey (2012) conducted research among 382 employees and managers in a medium-sized financial institution, and the study found that work engagement as measured by the UWES was a strong predictor of work outcomes, but when job satisfaction and affective commitment were controlled, the measure lost its ability to predict intentions to leave.

The next section discusses this proposed link between emotional intelligence and work engagement.

3.5 The proposed link between emotional intelligence and work engagement

In their research study, Bakker and Demerouti (2008) designed an overall model of work engagement. The Job Demands-Resources (JD-R) Model of work engagement links job and personal resources to work engagement and work engagement to organisational outcomes (Bakker & Demerouti, 2007). Studies have also shown that work engagement is a unique concept that is best predicted by job resources (e.g. performance feedback) and personal resources (e.g. self-efficacy) (Bakker et al., 2008).

According to Herman (2012), if employees maintain a high level of work engagement, they need to have the ability to manage all aspects of their emotional experiences in order to ensure a positive emotional state, which produces a positive upward spiral of performance. These positive emotional states can be achieved by employees first

recognising their own feelings and then managing strong emotions such as anxiety and anger (Herman, 2012).

There are two sets of variables in any kind of job, namely *job demands* and *job resources* (Schaufeli & Bakker, 2004).

Job resources refer to those physical, psychological, social or organisational aspects of the job that:

(1) reduce job demands and the associated physiological and psychological costs;
(2) are functional in achieving work goals; or
(3) stimulate personal growth, learning and development (Schaufeli & Bakker, 2004).

Research has shown that job resources such as social support from co-workers, performance feedback, a variety of skills, learning opportunities and autonomy are positively associated with work engagement (Bakker & Demerouti, 2007). These job resources can be applied at the task level (e.g. task significance, task identity, performance feedback and autonomy), when and how the work is organised (e.g. role clarity and being part of making decisions), at the interpersonal and social level (e.g. support from colleagues and supervisors) and at the organisational level (e.g. pay, career opportunities and job security) (Bakker & Demerouti, 2007).

Xanthopoulou et al. (2007a) expanded on the model in their article on the role of personal resources in the JD-R Model and indicated that personal resources can independently predict work engagement. This finding was deemed significant in the current study because the researcher contended that it is possible that emotional intelligence, which is a powerful personal resource, could increase work engagement levels among employees when developed.

The diagram of the JD-R Model below illustrates how job and personal resources predict work engagement.

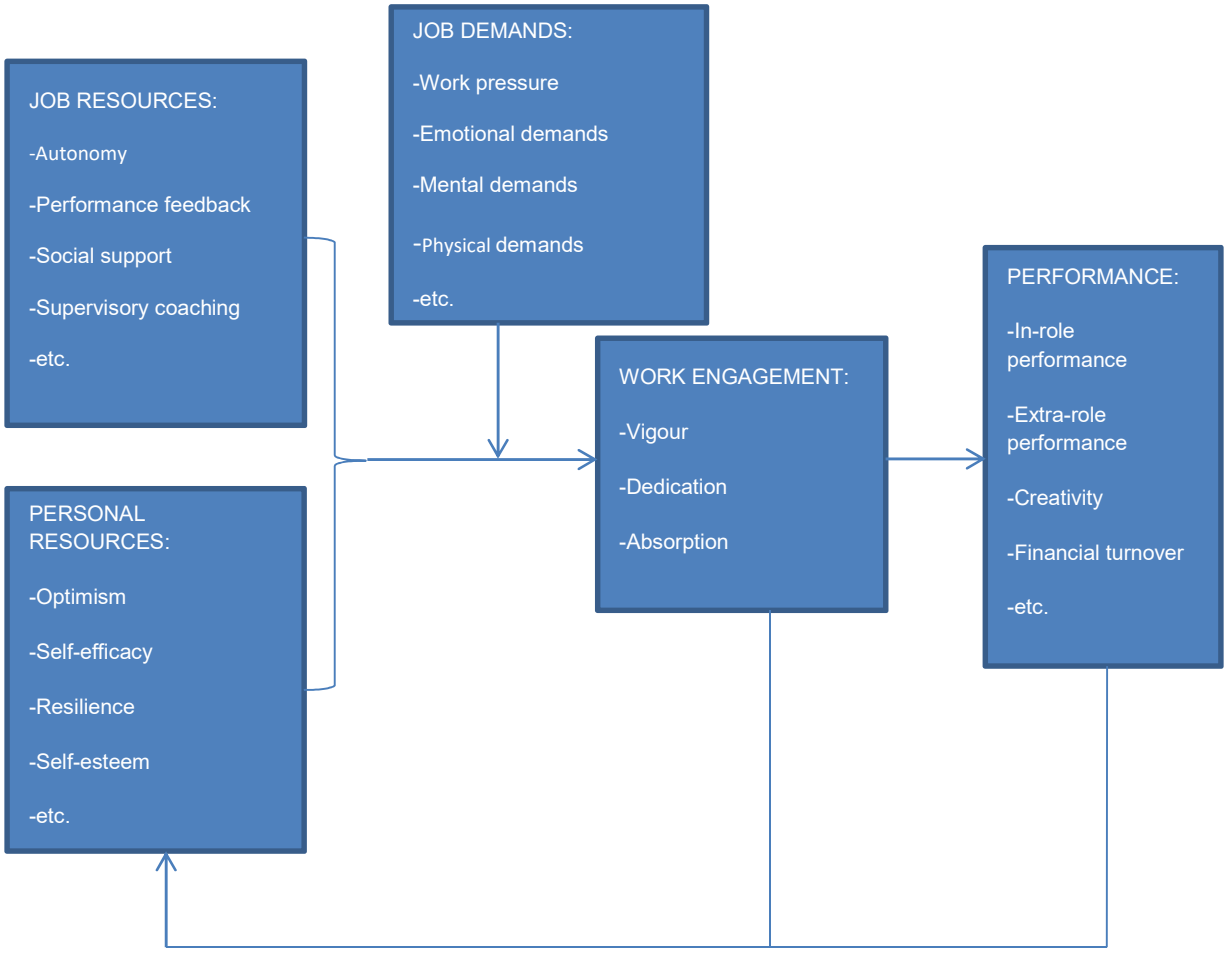


Figure 3.1. The JD-R Model of Work Engagement (Bakker & Demerouti, 2008, p. 218)

Job and personal resources independently or in combination predict work engagement and have a positive impact on engagement when job demands are high. Work engagement, in turn, has a positive impact on job performance. Engaged employees who perform well are able to create their own resources then reinforce engagement over time and create a positive gain spiral (Bakker & Demerouti, 2008).

By contrast, job demands are those physical, psychological, social or organisational aspects of the job that require sustained physical and/or psychological (cognitive or emotional) effort and are therefore associated with certain physiological and/or psychological costs (Bakker & Demerouti, 2007).

Job and personal resources are the drivers of work engagement and form the basis of the JD-R Model (Bakker & Demerouti, 2008). The model assumes that every occupation may have its own specific risk factors associated with job stress, and classifies these factors into two general categories of demands and resources. These two categories form the basis that may be applied to various occupational settings, irrespective of the particular demands and resources involved (Bakker & Demerouti, 2007).

Several researchers have investigated the relationship between personal resources and work engagement, and a number of studies have supported the dual pathways to employee well-being and indicated that it can predict important organisational outcomes (Bakker & Demerouti, 2007). Xanthopoulou et al. (2007a) expanded the JD-R Model by demonstrating that personal resources partially mediate the relationship between four job resources (autonomy, social support, supervisory coaching and opportunities for professional development) and work engagement.

A study by Bakker, Gierveld, and Van Rijswijk (2006) found that school principals with the most personal resources scored the highest on work engagement. These personal resources included resilience, self-efficacy and optimism in particular. The researchers were able to explain the unique variance in engagement scores, in addition to social support from team members and colleagues, principals, opportunity for development and social support. Resilience is therefore another personal resource that facilitates work engagement, indicating that engaged workers are effective in adapting to changing environments

A study by highly skilled Dutch technicians (Xanthopoulou et al., 2007a) indicated how personal resources (self-efficacy, organisation-based self-esteem and optimism) predicted work engagement. The study found that these employees were highly self-efficacious, they were convinced that they would be able to meet the demands they faced and they were inclined to believe that they would generally experience good outcomes in life. They also believed they could satisfy their needs by participating in roles in the organisation (Xanthopoulou et al., 2007a). In a follow-up study after two years, the researchers found that self-efficacy, organisation-based self-esteem and

optimism made unique contributions to explaining variance in work engagement over time, over and above the impact of job resources and previous levels of engagement (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007b).

According to Bakker and Demerouti (2008), engaged employees also perform better when they experience *positive emotions* such as happiness, joy and enthusiasm, and they are able to create their own job and personal resources and can transfer their engagement to others.

Chen and Chen (2012) noted in their study of cabin crew members, that the possible antecedents of work engagement, that is, the possibility for development and social support, have proven to be effectively predictive. They found that in order to enhance a cabin crew's perception of work engagement, sufficient job resources are required.

In a diary study, Kuhnel, Sonnentag, and Bledow (2012) also determined that day-specific job control qualified the relationship between day-specific time pressure and work engagement. On days with higher job control, time pressure was beneficial for work engagement, and on days with lower job control, time pressure was detrimental to work engagement.

Moving on to the link between personal resources and emotional intelligence, an exploratory study conducted by Dulewicz and Higgs (2000) attempted to establish and define the constuct of emotional intelligence using competency-based and personality factor scales. The reliability and construct and predictive validity of three scales (the 16PF, Occupational Personality Questionnaire and Job Competency Survey) were investigated, and reliability and validity were in fact confirmed. A competency such as resilience is directly related to personal competencies, as demonstrated in the JD-R Model. A higher score for resilience should therefore correspond with a higher score for emotional intelligence. The question arises whether the development of emotional intelligence would result in an increase in these personal competencies.

In a study by Carmeli (2003) on the relationship between emotional intelligence and work attitude, behaviour and outcomes were found to be positively related. The researcher suggested that managerial skills in general and emotional intelligence in

particular play a significant role in the success of senior managers in the workplace. The results of the study indicated that emotionally intelligent senior managers develop emotional attachment to their organisations and are also more committed to their career and more satisfied with their work. The researcher suggested that further studies in this field and future studies might benefit from a longitudinal research design and across various culture groups.

Carmeli and Josman (2006) recommended that further studies should be conducted on the relationship between job performance in terms of the underlying processes of emotional intelligence and how the concept moderates enhanced work outcomes.

Organisations expect employees with high emotional intelligence to achieve more in both the workplace and their personal lives and to contribute significantly to the organisation's performance. In their quest for competitive advantages, organisations have teamed up with researchers and consultants to initiate various programmes for developing an emotionally intelligent workforce. An example would be a study that was funded by Johnson and Johnson and conducted by Cavalla and Brienza in 2002 to assess the importance of emotional intelligence in leadership (Carmeli & Josman, 2006).

However, the empirical study of the role of emotional intelligence in individual success in the workplace is limited, and is still in a formative stage. In a study conducted by Carmeli and Josman (2006), it was determined that there is a positive relationship between emotional intelligence, task performance and organisational citizenship behaviour.

In a study by Carmeli, Yitzhak-Halevy, and Weisberg (2009), the positive relationship between emotional intelligence and four aspects of psychological well-being (self-acceptance, life satisfaction, somatic complaints and self-esteem) was confirmed. The researchers also noted that the concept of emtional intelligence is still in its infancy and merits further research.

Dulewicz and Higgs (1999) proposed in their original model of emotional intelligence that some elements can more readily be developed than others. They proposed that

the “enablers” such as self-awareness and emotional resilience are more amenable to development than the “constrainers” (such as conscientiousness) and “drivers” (such as motivation).

Research has indicated that it is possible to develop emotional intelligence. However, Dulewicz and Higgs (2004) reviewed a number of studies on emotional intelligence and the development thereof, and concluded that there are different views on the extent of development possible.

Mayer, Salovey, and Caruso (2004) speculated that while emotional intelligence is a relatively stable aptitude, emotional knowledge (the kind of information upon which emotional intelligence operates) is relatively easy to acquire and teach. They reported that two theses attempted to teach emotional knowledge to counsellors and students in order to raise their emotional intelligences levels and that there was little or no influence of training in emotional knowledge on the desired outcome in the studies. They believed that further research is warranted as both used short-term training programmes.

Esmond-Kiger et al. (2006) reported that the higher the level of previous exposure to the concept of emotional intelligence accounting students reported, the higher their emotional intelligence would be. This result suggested that accountants might be able to enhance these competencies through training.

Jonker (2009) conducted a study to compile and evaluate a programme aimed at the development of emotional intelligence in the accounting profession. A two-group design (pre- and post-test) was used. An accidental sample was taken from future employees in a financial management environment. The Bar-On EQ-i was administered and further data was gathered qualitatively by means of diary entries. The results showed an improvement in total emotional intelligence level. The specific areas of emotional intelligence were developed because the programme included the subscales of interpersonal, adaptability and general mood.

According to Frederickson (2001), by increasing the level of emotional intelligence in an organisation, the researcher endeavoured to set in motion a positive upward spiral,

as defined in the broaden-and-build theory. The theory posits that experiences of positive emotions broaden people's momentary thought action repertoires, which, in turn, serve to build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources. The theory and findings suggested that the capacity to experience positive emotions (including joy, interest, contentment, pride and love) may be a fundamental human strength central to the study of human flourishing (Fredrickson, 2001).

Bakker, Oerlemans, and Ten Brummelhuis (2013) described the following individual and organisational interventions that could be used to enhance employee work engagement:

(1) altering job demands;
(2) altering job resources;
(3) fostering job crafting;
(4) increasing employee psychological capital;
(5) utilising individual strength-based interventions;
(6) utilising happiness interventions;
(7) supporting new ways of working; and
(8) initiating work-life support initiatives.

The JD-R Model of work engagement links job and personal resources to employee engagement and employee engagement to organisational outcomes. According to Herman (2012), if employees can maintain a high level of work engagement, they need the ability to manage all aspects of their emotional experiences in order to ensure a positive emotional state, which will produce a positive upward spiral of performance. These positive emotional states can be achieved by employees first recognising their own feelings and then managing strong emotions such as anger and anxiety.

3.6 Chapter summary

This chapter covered the construct of work engagement and reviewed the various constructs relating to personal engagement, burnout/engagement, employee engagement and work engagement. It also touched on the components of work

engagement, namely vigour, dedication and absorption and how these constructs are measured.

It was established that job resources and personal resources are required to overcome or cope with job demands. When job and personal resources are increased, this may lead to work engagement in terms of the JD-R Model. Work engagement, in turn, leads to positive organisational outcomes. Therefore, in order to increase the organisational outcomes, work engagement levels should increase. The suggestion in this study is that an increase in emotional intelligence levels should increase personal resources, and thus improve the levels of work engagement among employees.

The literature review supported the premise that individuals with higher emotional intelligence perform better in their work. These findings should encourage organisations to promote the development of emotional intelligence as a tool to influence work performance outcomes.

The next chapter focuses on the overall research design for a quantitative experimental design, and discusses the research approach, design and procedures employed in this study.

CHAPTER 4: QUANTITATIVE RESEARCH DESIGN

4.1 Introduction

Chapters 2 and 3 provided the theoretical background on the constructs of emotional intelligence and work engagement and how the researcher linked the possibility of an increase in emotional intelligence to an increase in work engagement.

This chapter focuses on the design of the research study. The first part explains the research approach, and the second part provides a summary of the research design and procedure.

4.2 Research approach

The research approach relates to the rationale for the research and the empirical research aims and hypotheses.

4.2.1 Rationale for the research

Flourishing organisations expect their employees to be proactive, show initiative, collaborate with others, take responsibility for their own professional development and be committed to high-quality performance standards. Organisations require employees who are energetic, dedicated and absorbed in their work (Bakker & Schaufeli, 2008). In short, organisations need employees who are engaged.

The general aim of this research was to use a controlled experimental research design to establish whether the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence and thus their levels of work engagement.

4.2.2 Empirical research aims and hypotheses

The researcher formulated particular research questions and aims in chapter 1, and

these are expressed as hypotheses in this chapter.

In this section, the researcher reformulated the research aims into empirical hypotheses. Answering these hypotheses would enable him to ultimately determine whether or not the study achieved the research aims and answered the research questions.

The reformulation of the research aims into hypotheses is set out in table 4.1 below.

Table 4.1
Empirical Aims and Hypotheses

Empirical aims	Hypotheses
To assess the levels of emotional intelligence of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels have increased.	**Increase in levels of emotional intelligence:** The levels of emotional intelligence of employees in the experimental group will increase significantly following the participation of some in an emotional intelligence intervention, while the emotional intelligence levels of the employees in the control group will remain the same.
To assess the levels of work engagement of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels have increased.	**Increase in levels of work engagement:** The levels of work engagement of employees in the experimental group will increase significantly following the participation of some in an emotional intelligence intervention, while the work engagement levels of employees in the control group will remain the same.
To assess the significance of the relationships between individual components of emotional intelligence and work engagement before and after the participation of some employees in an emotional intelligence intervention.	**Relationship between components of emotional intelligence and work engagement:** There will be positive and significant relationships between the levels of emotional intelligence and work engagement both before and after the intervention.
To determine whether or not the levels of emotional intelligence predict levels of work engagement.	**Relationship between overall levels of emotional intelligence and work engagement:** The levels of emotional intelligence will significantly predict the levels of work engagement.

4.3 Research design and procedure

The research design and procedure section covers the general research design, sampling, participants, measuring instruments, intervention material and research

procedure.

4.3.1 Research design

The researcher opted for a controlled experimental quantitative research in the study, comprising a two-group design with a pre- and post-test. Employees could elect at the commencement of the study to participate in the intervention or whether they would only complete the assessments. Based on the participants' preferences, researcher allocated them to a control or experiment group.

Each group was required to complete a pre-test and post-test in emotional intelligence and work engagement, but only the experimental group participated in an intervention aimed at increasing levels emotional intelligence. Neither group participated in an intervention specifically aimed at increasing work engagement.

4.3.2 Sampling

The population consisted of all 473 employees in a medium-sized audit firm in South Africa.

According to Terre Blanche et al. (2006), the majority of research in the social sciences relies on non-probability samples. Non-probability sampling refers to any kind of sampling where the selection of elements is not determined by the statistical principle of randomness.

The researcher used non-probability convenience sampling to select employees for the study who volunteered and were available to participate. After the request for participation, 87 employees or 18.4% of the population signed up for the study.

4.3.3 Participants

The researcher sent the pre-test emotional intelligence (Genos EI) and work engagement (UWES) instruments to all the employees who had opted to participate

in the study.

The initial pre-test work engagement questionnaire included a request for the following demographic information:

(1) Name and surname
(2) Occupational level in the organisation, ranging from level 1 to 6 – level 1 being clerical staff and level 6 equity partners
(3) Name of business or service unit, that is, Support, Assurance, Outsourcing, Advisory or Tax
(4) Gender
(5) Age, namely below 20, 20 to 30, 30 to 40, 40 to 50 or above 50
(6) Ethnic group, namely black African, coloured, Indian, white, and other
(7) Qualification, namely high school, diploma, bachelor's degree, honours degree, master's degree or other
(8) Languages, namely all 11 official languages, and other

The results, based on the demographical information above, are discussed in more detail in chapter 5.

4.3.4 Ethical considerations

Participants were informed that their participation in the study is completely voluntary and that they should be willing to share information about their emotional experiences during the intervention.

Participants were also informed that all responses will be treated with anonymity and will only be used for research purposes. Only the researcher and statistical assistant had access to the information collected.

The firm granted permission to the researcher to conduct the research and ethical clearance was granted by the Department of Industrial and Organisational Psychology to conduct the study.

4.3.5 Measuring instruments

Although there are a number of instruments that researchers can use to study emotional intelligence and work engagement, the researcher decided on the two instruments discussed below.

4.3.5.1 Emotional intelligence: The Genos EI Inventory

a. Rationale and purpose

The Genos Emotional Intelligence Inventory or Genos EI focuses on the measurement of the frequency of typicality with which an individual may exhibit emotional intelligent behaviours. The reasons for this are the belief that organisations are more interested in how an individual typically behaves in the workplace rather than a once-off demonstration of a maximum capacity (Gignac, 2010).

b. Nature and composition (dimensions)

The Genos EI is a 70-item multi-rater assessment designed as a learning and development aid in the workplace. The instrument does not measure emotional intelligence as such but rather how often people display 70 emotionally intelligent workplace behaviours that represent emotional intelligence in the workplace (Palmer et al,. 2009).

The items are scored on a five-point Likert scale from “almost never” to “almost always”. The English reading level of the items has been determined to be associated with a grade level of 7.4. The normative sample consists of individuals aged between 18 and 76, which is deemed appropriate for the workplace. The inventory can also produce an inconsistency index score, two socially desirable responding scores, a total emotional intelligence score and seven subscale scores (Gignac, 2010).

The total emotional intelligence score reported is based on an equally weighted composite of the seven dimensions of the Genos EI. The table below describes the dimensions of the Genos EI (Gignac, 2010).

Table 4.2
Dimensions of the Genos EI, as adapted from Gignac (2010)

GENOS EI	Description of dimension	Example of item
Emotional self-awareness (ESA)	The skill of perceiving and understanding your own emotions.	• *Is aware of when he/she is feeling negative at work.* • *Is aware of how his/her feelings influence the way he/she responds to colleagues.*
Emotional expression (EE)	The skill of effectively expressing your own emotions.	• *Expresses how he/she feels at the appropriate time.* • *Expresses his/her feelings effectively when someone upsets him/her at work.*
Emotional awareness of others (EAO)	The skill of perceiving and understanding others' emotions.	• *Demostrates an understanding of others' feelings at work.* • *Understands the things that make people feel valued at work.*
Emotional reasoning (ER)	The skill of using emotional information in decision making.	• *Asks others how they feel about different solutions when problem solving at work.* • *Demonstrates to collegues that he/she has considered others' feelings in decisions he/she makes at work.*
Emotional self-management (ESM)	The skill of managing your own emotions.	• *Ruminates about things that anger him/her at work.** • *Responds to events that frustrate him/her at work effectively.*
Emotional management of others (EMO)	The skill of positively influencing the emotions of others.	• *Creates a positive working environment for others.* • *Motivates others towards work-related goals.*
Emotional self-control (ESC)	The skill of effectively controlling your own strong emotions.	• *When under stress he/she becomes impulsive.** • *Demonstrates excitement at work appropriately.*

* = negatively keyed items

The Genos EI is associated with an appreciable and meaningful amount of discriminant validity because it does not correlate substantially with socially desirable responses. Furthermore, based on a differential reliability index analyses, all of the Genos EI inventory items substantially correlate with the Genos EI scores than with impression management (Gignac, 2010).

Although moderately sized correlations were reported between several personality dimensions and the Genos EI, these were associated with a sufficient amount of unique factorial validity to refute contentions of construct redundancy. The direction of the correlations between the Genos EI and personality were such that an individual

with high emotional intelligence was less emotionally unstable, more extroverted, more open to experience, more agreeable and more conscientious (Gignac, 2010).

Emotional intelligence measures should comprise a number of general properties. Firstly, the model upon which it is based should be technically well grounded. This is generally the case where a model has been conceptualised through the processing of existing research findings and other well-established theories (Palmer, 2007).

Secondly, the measure should comprise the following psychometric properties:

(1) Internal consistency reliability.
(2) Factorial validity. This should indicate that the various components of the model do exist in the population data that the measure has been designed to assess.
(3) Criterion-related validity. This means that a body of research studies have shown that scores on the assessment
    (a) are meaningfully related to other similar measures;
    (b) can predict variance in other theoretically related variables;
    (c) can distinguish between groups; and
    (d) are sufficiently distinct from measures of the construct (Palmer, 2007).

The Genos EI does appear to be associated with a number of workplace relevant well-being indicators such as life-satisfaction-self (r = .34), life-satisfaction-dual (r = .25), role ease (r = .36), role balance (r = .30), job competence (r = .29) and job aspiration (r = .42). Higher Genos EI scores are also correlated positively to higher levels of job satisfaction and organisational commitment (Gignac, 2010).

The South African normative sample comprises 1 023 employees (56.9% males, 60.8% white, mean age 38.3, standard deviation 8.5, range = 17 to 67) who reported to be residing in South Africa on a permanent basis. Educational levels ranged from grade 11 or below to doctoral degrees; role levels ranged from student level to CEO; and 43 participants were from the accounting and audit industry (Gignac, 2010).

An important issue to address with respect to psychological assessment in the South African context is the possibility that one or more of the items in an inventory may

discriminate against a particular racial group. For this reason, the Genos EI has been investigated using a statistical technique known as differential item functioning, the results of which have been published in a peer-reviewed publication (Gignac & Ekermans, 2010).

Based on the two samples of white (n = 393) and non-white (n = 393) participants (stratified for age gender and education), the Genos EI items were not found to discriminate between either group in a meaningful way. These results support the notion that Genos EI may be justifiably applied to individuals in South Africa's two largest race groups, provided the participants are fluent in English (Gignac & Ekermans, 2010).

The next subsection reviews the reliability of results.

c. Reliability

Researchers can test whether a measure is reliable in a number of different ways. It is assumed that a test is dependable if, during a number of different testing times, the scores on a test correlate. These include test-retest reliability, parallel forms or the split-half method (Terre Blanche et al., 2006).

The internal consistency measure of reliability does not rely on parallel forms or the splitting of tests, which are the most common measures of reliability.

Cronbach's alpha coefficient is the most common estimate with a number ranging from 0 (no internal consistency) to 1 (maximum internal consistency). What is being measured affects the acceptable internal consistency, but as a general rule of thumb, questionnaire-type scales with an alpha value greater than .75 are considered internally consistent and therefore reliable (Terre Blanche et al., 2006)

The *reliability* of the two instruments can be determined in the following ways:

(1) Test-retest reliability refers to the stability of the test scores over time and involves repeating the test on at least one other occasion

(2) Split-half reliability refers to the administration of a single test that is divided into two equal halves.
(3) Alternate-form reliability is the expression of the correlation between different forms of the same measure, where the items on each measure represent the same item content and construct.
(4) Inter-rater reliability is used to determine the agreement between the different judges or raters when they are observing or evaluating the performance of others (Marczyk et al., 2005).

Chapter 6 of the Genos EI technical manual contains evidence supporting the respectable levels of internal consistency reliability as well as test-retest reliability. More specifically, at a total scale level, the reliability estimates exceeded .90, while at the subscale level, the estimates exceeded .70. From a test-retest perspective, the Genos EI exhibited scale correlations of .83 and .72 at two-month and eight-month intervals respectively (Gignac, 2010).

Based on the above information, the researcher concluded that the Genos EI would be a reliable indicator of emotional intelligence in the current study.

d. Validity

External validity can be problematic, and this refers to the generalisability of the results of the experiment. Terre Blanche et al. (2006, p. 559) defined external validity as follows: “The degree to which research findings can legitimately be generalised to other similar contexts. This is determined by the representativeness of the research participants and the measures used in the research.”

Validity can be categorised into empirical and non-empirical methods. Empirically oriented validity research can include factorial, concurrent, discriminant and predictive validity. Non-empirical methods of evaluating psychometric validity include face and content validity. According to Messick (1995), construct validity is achieved when information is collected by conducting the above validity tests.

Chapter 7 of the Genos EI technical manual contains evidence supporting the observation of all common forms of validity. This specifically includes evidence on factorial validity, concurrent validity, predictive validity and discriminant validity, as well as evidence of incremental predictive validity. The manual informs researchers and practitioners that they can be confident that the Genos EI Inventory produces scores that are valid indicators of adult emotional intelligence in the workplace (Gignac, 2010).

Based on the above information, the researcher considered that Genos EI to be a valid indicator of emotional intelligence that can be used for future research.

e. Motivation for using the instrument

The researcher required an assessment that would suit a workplace setting. He also needed an instrument that would be easy to use and not take too long to complete.

The Genos EI fitted the above requirements, as Genos designed the instrument specifically for workplace settings – hence its workplace relevance. In conjunction with the theoretical and empirical research to support a seven-factor model, there are also some practical benefits. Gignac (2010) contends that the Genos EI is more coherent than other self-described measures of EI, and the seven dimensions are considered manageable for human resource professionals and employees to digest. The assessment is also easy to use and informative, and takes only about 20 minutes to complete (Gignac, 2010).

f. Administration

The instrument is a 70-item assessment and the items are scored on a five-point Likert scale from “almost never” to “almost always”. In the current study, the assessment was sent to employees using an e-mail-based survey tool. Employees could then complete the assessment in their own time and submit the results to an administrator. The results were then captured on an Excel spreadsheet which was then imported into SPSS version 24 for processing.

4.3.5.2 Work engagement: The Utrecht Work Engagement Scale (UWES)

a. Rationale and purpose

Work engagement initially emerged as the antipode of burnout, but after investigations into burnout research, the construct was expanded to include its assumed opposite. The UWES operationalises this new concept of work engagement by using three scales, namely vigour, dedication and absorption. The preliminary test manual summarised the psychometric analyses using the following two large databases; a Dutch language database that included almost 10 000 respondents from The Netherlands and Belgium, and an international database that included almost 12 000 respondents from nine different countries (Schaufeli & Bakker, 2003).

b. Nature and composition (dimensions)

The UWES includes items for the assessment of three engagement dimensions included in Schaufeli et al.'s (2002) definition, namely vigour, dedication and absorption.

The instrument assesses vigour by using the following six items that refer to high levels of energy and resilience, the willingness to invest effort, not being easily fatigued and persistence in the face of difficulties:

(1) At my work, I feel bursting with energy.
(2) At my job, I feel strong and vigorous.
(3) When I get up in the morning, I feel like going to work.
(4) I can continue working for very long periods at a time.
(5) At my job, I am very resilient, mentally.
(6) *At my work, I always persevere, even when things do not go well* (Schaufeli & Bakker, 2003).

Those who score high on vigour usually have much energy, zest and stamina when working, whereas those who score low on vigour have less energy, zest and stamina as far as their work is concerned (Schaufeli & Bakker, 2003).

The instrument measures dedication by means of five items that refer to deriving a sense of significance from one's work, feeling enthusiastic and proud about one's job, and feeling inspired and challenged by it. The following items are used:

(1) I find the work that I do full of meaning and purpose.

(2) I am enthusiastic about my job.

(3) My job inspires me.

(4) I am proud on the work that I do.

(5) *To me, my job is challenging* (Schaufeli & Bakker, 2003).

Those who score high on dedication strongly identify with their work because they experience it as meaningful, inspiring or challenging (Schaufeli & Bakker, 2003).

The assessment measures absorption by means of six items that refer to being totally and happily immersed in one's work and having difficulty detaching oneself from it, to the extent that time passes quickly and one forgets everything else around one. The following items are used:

(1) Time flies when I'm working.

(2) When I am working, I forget everything else around me.

(3) I feel happy when I am working intensely.

(4) I am immersed in my work.

(5) I get carried away when I'm working.

(6) *It is difficult to detach myself from my job* (Schaufeli & Bakker, 2003).

Those who score high on absorption feel that they are usually happily engrossed in their work, they feel immersed and have difficulty detaching from work because it carries them away. They seem to forget everything else around and time seems to fly as a result. Those who score low on absorption do not feel engrossed or immersed in their work, they have no difficulty detaching from it and they do not forget everything around them, including time (Schaufeli & Bakker, 2003).

The UWES appears to have satisfactory psychometric properties, as highlighted below.

(1) The three subscales are internally consistent and stable across time.

(2) The three-factor structure is confirmed, and seems to be invariant across samples from different countries.
(3) Engagement as measured with the UWES is negatively related to burnout, despite the fact instead of loading on burnout, professional efficacy loads on engagement.
(4) Engagement is weakly and positively related to age.
(5) Men show slightly higher engagement scores than women. Although statistically significant, in practical terms, these differences are irrelevant.
(6) There are small differences in levels of engagement between occupational groups, but these also lack practical significance (Schaufeli & Bakker, 2003).

It takes about five to ten minutes to complete the UWES, which can be done individually or in a group. The UWES can be used for individual assessment and group assessment, for instance, as part of an employee satisfaction survey or a psychosocial risk evaluation. The instructions at the top of the UWES test form are self-evident (Schaufeli & Bakker, 2003).

This scale has been validated in several countries, including South Africa, and the confirmatory factor analysis applied to these studies confirmed that the fit of the hypothesised three-factor structure to the data was superior to that of any other alternative factor structures. In addition, the internal consistency of the three subscales has proven sufficient in each study (Schaufeli & Bakker, 2003). Rothmann and Rothmann (2010) and Herman (2012) also used the scale in the South African context.

Although differences in levels of engagement have been computed between countries, these are difficult to interpret since the composition of the samples from the various countries differs largely. The Finnish sample, for example, included school teachers and academic teaching staff, whereas the South African sample only included police officers. The country samples are thus contaminated because they deal with specific occupational groups (Schaufeli & Bakker, 2003).

Despite these results and similar to other research instruments, rigorous criticism has been levelled at the UWES. The criticism relates to methodological and theoretical concerns about its construct validity. For example, Shirom (2003) argued that the three

dimensions of engagement were not developed theoretically, but are merely representations of the opposite of burnout.

Shirom (2003) also criticised the UWES because its dimensions overlap considerably with other psychological concepts. For example, vigour includes motivational elements (e.g. willingness to invest effort) and mental resilience (e.g. persistence in the face of difficulties); dedication overlaps with the major dimensions of job involvement; and absorption overlaps with psychological presence at work (Moshoeu, 2017).

Moshoeu (2017) noted that although extensive research has demonstrated the validity and reliability of the UWES across a wide range of settings, the theoretical three-factor structure of the measure is not as robust as anticipated.

Researchers have found that the measure cannot be transferred to other nationalities and ethnic groups with multicultural and multilinguistic backgrounds (Goliath-Yarde & Roodt, 2011).

Based on the findings of Moshoeu (2017), there do appear to be some inconsistencies in the literature as far as the UWES is concerned in South Africa. Moshoeu (2017) concurred with studies that have reported two-factor structures of engagement in South African samples.

According to Moshoeu (2017), the original UWES is an unsuitable instrument to assess the level of engagement in a South African sample with its diverse cultures and languages, and there does not appear to be any support for the theoretically-based three-factor structure of the original UWES.

Despite its inherent shortcomings, the researcher still decided to use the UWES in this study, because it reflects how people view, feel about and react to their jobs, and that it would improve the researcher's understanding of employees' emotional and personal experience of their work. Moreover, the scale reflects engagement through scientifically formulated questions that indicate levels of vigour, dedication and absorption. Furthermore, the UWES can be used as an unbiased instrument to measure engagement because its equivalence is acceptable for different race groups.

c. Reliability

Two aspects of reliability are considered, namely internal consistency and test-retest reliability, also referred to as stability.

All the scales of the UWES are highly internally consistent. Furthermore, adding another item to the vigour and absorption scales hardly increases the scales' internal consistency. The internal consistencies of the shortened version are somewhat lower but still within the acceptable range.

The table below indicates the Cronbach α of the UWES scales, as set out in the technical manual (Schaufeli & Bakker, 2003).

Table 4.3
Cronbach α of the UWES Scales (Schaufeli & Bakker, 2003, p. 26)

	UWES 17 scale (n = 12 161)		
Item	**Total**	**Md**	**Range**
Vigour	.82	.82	.66 - .87
Dedication	.89	.89	.83 - .92
Absorption	.83	.83	.79 - .88
Total score	**.93**	**.93**	**.88 - .95**

Finally, the test-retest reliability or stability of engagement across a one-year time lag is similar to that of burnout and does differ much between the three dimensions, although the stability coefficient of vigour seems to be somewhat higher. The stability of the shortened version is similar to that of both longer versions. Two longitudinal studies were included in the international database, which allowed the researchers involved to assess the stability of the UWES across time. The UWES was administered twice with an interval of one year among 293 Australian Salvation Army officers and among 563 Norwegian paramedics (Schaufeli & Bakker, 2003).

The stability coefficients ($r_{,}$) of the UWES Scale, according to the technical manual, are set out below (Schaufeli & Bakker, 2003).

Table 4.4
Test-retest Reliability of the UWES Scales (Schaufeli & Bakker, 2003, p. 26)

Scale	Salvation army (Aus) (n = 293)	Paramedics (NOR) (n = 563)
Vigor	.64	.71
Dedication	.58	.69
Absorption	.58	.69
UWES 17	.63	.72

The researcher performed a test-retest reliability in this research.

Table 4.5
Cronbach α of the UWES Scales (Schaufeli & Bakker, 2003, p. 26)

	UWES 17 scale	
Item	**Experiment group**	**Control group**
Vigour	.53	.78
Dedication	.60	.82
Absorption	.41	.75
Total score	**.53**	**.82**

Based on the above, the researcher considered that UWES to be a reliable indicator of work engagement to measure the construct.

d. Validity

The validity studies have confirmed the factorial validity of the UWES. As expected, the UWES consists of three scales that are highly correlated. This pattern of relationships is evident in samples from different countries, which confirms the cross-national validity of the three-factor solution. This means that engagement is a construct that consists of three closely related elements that are measured by three internally consistent scales (Schaufeli & Bakker, 2003).

The studies have shown that work engagement is indeed negatively associated with burnout, although the relationship between vigour and exhaustion and between dedication and cynicism is less strong than anticipated (Schaufeli & Bakker, 2003).

Furthermore, engagement can be differentiated from workaholism. In particular, job resources, which act as motivators, seem to cause work engagement, whereas engaged employees exhibit positive job attitudes, experience good mental health and seem to perform better than those who are less engaged (Schaufeli & Bakker, 2003).

Finally, engagement is not restricted to the individual only – it may cross over to others, thus leading to what has been labelled “collective engagement” (Schaufeli & Bakker, 2003).

Based on the above, the researcher deemed the UWES to be a valid indicator of work engagement that can be used for future research on work engagement.

e. Motivation for using the instrument

As stated previously, it takes about five to ten minutes to complete the UWES and the instructions are easy to follow. The scales include useful descriptions of the Likert scale such as “A few times a year or less” (Schaufeli & Bakker, 2003).

Despite the shortcomings mentioned earlier, the UWES was employed in this study, because it can be used as an unbiased instrument to measure engagement and its equivalence is acceptable for different race groups.

f. Administration

The instrument is a 17-item assessment and the items are scored on a six-point Likert scale, ranging from “never” to “always” or “every day”. The assessment was sent to employees using an e-mail-based survey tool. Employees could then complete the assessment in their own time and submit the results to an administrator. The data was imported into SPSS for analysis.

4.3.6 Intervention material

The general aim of this research was to use a controlled experimental research design to establish whether the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence and thus improve their levels of work engagement.

According to Jonker (2009), a development programme for emotional intelligence should start with a theoretical introduction by choosing one of the emotional intelligence models and self-assessment. Interventions should be in small groups and have a strong experiential undertone. Time should be allowed between multiple training sessions for the application of the newly acquired emotional intelligence skills. Training design should be specific and adult learning principles followed. Training should be provided throughout the organisation for registered psychologists or human resource officials with a strong psychological background in the design and presentation of development programmes aimed at emotional intelligence. After training, the organisation should establish support networks and assign coaches in order to maintain and further develop efforts.

Training specifically aimed at improving emotional intelligence has not evolved as a paradigm on its own, and existing emotional intelligence programmes fail because they make use of cognitive learning over a short period of time. The effectiveness of these programmes is not measured and behavioural changes are not evident.

Interventions should also not be packaged purely on the basis of mixed models of emotional intelligence (Jonker, 2009).

Cherniss and Goleman (2001) developed a model based on the premise that people go through several stages before they are ready to engage in meaningful change efforts.

The figure below sets out the optimal process for promoting emotional intelligence in organisations.

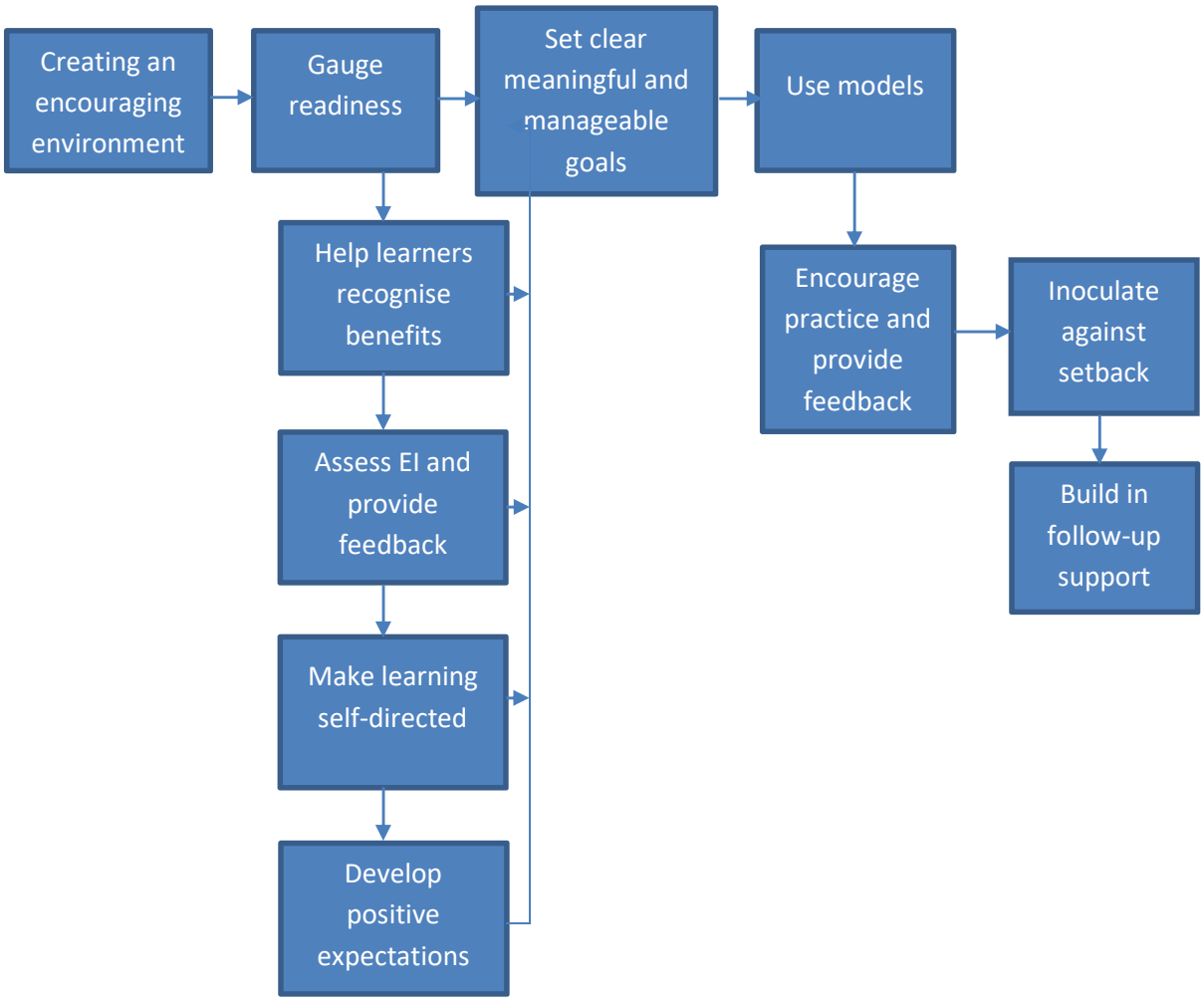


Figure 4.1. Optimal Process for Promoting Emotional Intelligence in Work Organisations (Cherniss & Goleman, 2001, p. 219)

In the precontemplation stage, employees have no interest in change and no plans, whereas in the contemplation stage they are aware of some benefits but not yet sure that these are desirable and possible. Employees decide during the preparation stage that they will undertake a programme of personal change. Individuals may be resistant or ambivalent – hence the need for facilitators to devote more attention to strategies for increasing employees' motivation and engagement. The next stage is action, where practice is encouraged, followed by the maintenance phase, during which setbacks may occur when employees apply what they have learnt and in what areas they require support (Cherniss & Goleman, 2001).

The Genos EI has developed emotional intelligence intervention material that is used to increase the level of emotional intelligence among employees. This is considered to be appropriate as the material was developed to be used in conjunction with the Genos EI assessment. The material and process recommended by Genos EI adhered to the criteria set out above, and the fundamental aspects of the model as proposed by Cherniss and Goleman (2001) were applied in the intervention in the current research.

The focus of this study was on emotional self-awareness. The outcomes to achieve this can be summarised as follows:

(1) understanding what emotional intelligence is;
(2) understanding why it is important to demonstrate emotional intelligence in the workplace;
(3) determining a participant's ideal emotional intelligence profile;
(4) gaining insight into how often a participant currently demonstrates emotionally intelligent workplace behaviours;
(5) enhancing a participant's decision making;
(6) enhancing the behaviours the participant displays to others; and
(7) improving a participant's performance at work.

The intervention material included theoretical information on the seven emotional skills referred to in this study including definitions and workplace applications. The individual emotional intelligence reports were shared with participants individually and key general concepts were discussed in a group setting. The seven emotional skills components were then discussed in more detail in order for participants to understand their assessment results in more detail.

In-session activities required participants to explore their own knowledge of emotional intelligence and this included self-awareness questions that are open ended such as "workplace events that would results in positive emotions associated with a particular value."

Participants were required to set personal awareness goals and to develop action plans to improve particular emotional self-awareness competencies.

The intervention material also included a guided “homework” component that includes the following activities:

(1) a requirement to provide a personal definition of each skill, as well as an example of such a skill in relation to the participant’s work;
(2) a meeting between the participant and his or her line manager to discuss the participant’s assessment of his or her level of emotional intelligence;
(3) a request to the line manager to provide feedback on each skill, including where the participant fared well or could improve;
(4) documentation of a participant’s behaviours during meetings with the line manager that could have led to higher of lower emotional intelligence, as well and the key insights gained from the meetings;
(5) identification of some core values from a list, and adding positive and negative emotions associated with each value and how these affects participants’ decisions and behaviours; and
(6) documentation of participants’ personal journal of their action plan, based on their insights.

The next section discusses the research procedure followed in this study.

4.3.7 Research procedure

The researcher conducted the research in in the following phases:

4.3.7.1 Phase 1: Setup and preparation phase

The researcher obtained approval from the managing partner of the firm to conduct the research, and the firm’s human resources department assisted in setting up the sessions with prospective participants.

The researcher called for volunteers to participate in the study from a staff complement of 473, of which 87 employees signed up for the study.

The researcher conducted a setup session with these participants prior to the intervention. The purpose of the session was to foster a positive relationship with the target population. The researcher negotiated a broad contract with the participants by stating what they could expect from the intervention and the facilitator.

4.3.7.2 Phase 2: Pre-test phase

The researcher sent the pre-tests to the participants after the initial set-up session. The researcher requested all 87 participants to complete the pre-test questionnaires for emotional intelligence (Genos EI) and work engagement (UWES), but seven participants did not complete the post-test questionnaires resulting in a dropout rate of 8.05%.

4.3.7.3 Phase 3: Initial training phase

A total of 47 of the 87 employees who signed up opted to participate in the emotional intelligence intervention.

This phase was devoted to presenting the emotional intelligence training aspect of the intervention. The training focused on the self-awareness aspect of the emotional intelligence model. Each participant completed an emotional intelligence role analysis, which is a short assessment that helps the participant to determine the level of emotional intelligence required to perform his or her roles successfully. The researcher asked the group for general feedback to gauge their understanding, and introduced the emotional intelligence framework, as set out in chapter 2. The training was conducted in a three-hour session.

The researcher then explained the next phase, which is self-study outside the training environment.

4.3.7.4 Phase 4: Self-study phase

The researcher requested the participants to complete a worksheet comprising each

emotional intelligence skill.

The period allowed for self-study that spanned one month.

4.3.7.5 Phase 5: Feedback

The researcher scheduled a follow-up session with the participants and obtained general feedback from them. The participants also shared their experiences in a session lasting two hours.

Phases 3 to 5 are collectively referred to as the intervention.

4.3.7.6 Phase 6: Evaluation of change

The researcher sent the post-test UWES and Genos EI to participants and collected the completed assessments.

4.3.7.7 Phase 7: Interpretation of the results

The researcher obtained and interpreted the results of the assessments. The results are set out in Chapter 5.

This section described the process followed in more detail, while the next section looks at the statistical analysis of the results obtained during these steps.

4.3.8 Statistical analysis

Researchers can use various statistical procedures to describe groups of individuals and events, examine the relationships between different variables, measure differences between groups and conditions and examine and generalise the results obtained from a sample back to the population from which the sample was drawn. Statistical procedures generally involve two major areas, namely *descriptive* and *inferential* statistical analysis (Marczyk et al., 2005).

4.3.8.1 Descriptive statistical analysis

Descriptive statistics are used to describe the data collected in research studies to accurately characterise the variables under observation within a specific sample. Descriptive analyses are frequently conducted to summarise a study sample prior to analysing the study's primary hypothesis. This provides information on the overall representativeness of the sample, as well as the information necessary for other researchers to replicate the study. These include frequencies, percentages, measures of central tendency, dispersion and graphical displays (Marczyk et al., 2005).

In this study, descriptive statistics were used to decribe the demograhic profiles of the sample according to ethnicity, gender, unit distribution, occupational level, age and educational level.

Descriptive statistics are also utilised to report the mean scores of the pre- and post-test emotional intelligence and work engagement assessments.

4.3.8.2 Inferential statistical analysis

Inferential statistical analysis entails examining the inferences made when samples are drawn from the population, and allows researchers to draw conclusions beyond the immediate samples and data in a study. According to Marczyk et al. (2005), inferential statistics can be used to infer from between-group differences in a particular study sample how the intervention may affect a larger population.

The most widely used inferential statistical procedures include the *t-test*, *analysis of variance (ANOVA), chi-square and regressions* (Marczyk et al., 2005).

T-tests are used to test the mean differences between two groups. In general, they require a single dichotomous independent variable (e.g. an experimental and a control group) and a single continuous dependent variable (Marczyk et al., 2005). This test was not required for the analysis of data in the current research.

ANOVA is also a test of mean comparisons like the t-test, but is able to compare means across more than two groups or conditions. ANOVAs and t-tests are appropriate only when the dependent variables being measured are continuous (i.e. interval or ratio) (Marczyk et al., 2005).

In the current study, the researcher used a mixed design factorial ANOVA to investigate the hypotheses. Reports derived from the results indicate within-subjects' contrasts, between-subjects' contrasts and interaction statistics.

The within-subjects' contrasts are the differences between the pre- and post-tests without consideration of the experimental and control groups, while the between-subjects' variable examines the differences between the experimental and control groups as a whole, without considering the pre- and post-tests. The interaction scores measure whether there is a statistically significant difference between the pre- and post-test averages when the researcher compares the results of the control group with those of the experimental group.

Researcher can use the *F*-test to test the hypothesis that, in the population from which two or more samples have been drawn, there is (1) no difference between the two or more means, or equivalently (2) no relationship between membership in any particular group and score on the response variable. The *F*-test is a test of significance and consists of two components, namely the size of the effect and the size of the study (Rosenthal & Rosnow, 1984).

In conjunction with the *F*-value, a *p*-value is reflected in a significance (sig.) column. The *p*-value presents the probability that the obtained value or larger could be obtained under the assumption that the null hypothesis (e.g. no difference between the means) is true. A small *p*-value (smaller than .05) is deemed sufficient evidence that the result is statistically significant (Ellis & Steyn, 2003).

The researcher therefore looks for results with *p*-values smaller than .05 in order to determine whether the within-subjects' contrasts, between-subjects' contrasts and interaction statistics are significant.

Statistical significance does not necessarily imply that the results are important in practice, as these tests tend to yield small *p*-values (indicating significance) as the size of the data increases (Ellis & Steyn, 2003).

It is necessary to know whether a relationship between two variables is practically significant (Ellis & Steyn, 2003). Partial eta squared is a measure of this practical significance, and it is therefore only meaningful to look at this score when the relationship is significant. Eta squared measures the proportion of the total variance in a dependent variable that is associated with the membership of different groups defined by an independent variable. Partial eta squared is a similar measure in which the effects of other independent variables and interactions are partialled out (Richardson, 2011).

Eta squared (η2) is a measure of effect size for use in ANOVA and is analogous to R^2 from multiple linear regression. η2 ranges between 0 and 1, and is interpreted as a rule of thumb as

(1) .01 – small
(2) .09 – medium
(3) .25 – large (Cohen, 1988)

The researcher therefore looks for results with *p*-values smaller than .05, as well as eta-squared ratios in excess of .25 in order to assess whether the within-subjects' contrasts, between-subjects' contrasts and interaction statistics are statistically significant and practically large.

The general linear model (GLM) underlies most of the statistical analyses used in applied and social research. It is the foundation for the t-test, ANOVA, analysis of covariance (ANCOVA), regression analysis and many of the multivariate methods, including factor analysis, cluster analysis, multidimensional scaling, discriminant function analysis, canonical correlation and so forth. Because of its generalisebility, the model is significant in social research (Trochim, 2017).

The GLM allows the researcher to summarise a wide variety of research outcomes. A

major challenge for the researcher who uses the GLM is model specification. The researcher is responsible for specifying the exact equation that best summarises the data for a study. The GLM is one of the principal tools in the statistical analysis of data., and represents a major achievement in the advancement of social research in the 20th century (Trochim, 2017).

There are various types of regression analyses, including *linear regression*, *simple regression* and *multiple regression*. Linear regression is a method of estimating or predicting a value on some dependent variable, given the values of one or more independent variables, whereas in simple regression, the researcher attempts to predict the dependent variable with a single independent variable. In multiple regression, any number of independent variables can be used to predict the dependent variable (Marczyk et al., 2005).

Simple regression was used in this study because there was only one independent variable that predicted the dependent variable.

All of the regression analysis methods could have been applied in this study, depending on whether emotional intelligence and work engagement were used as a whole or whether these constructs were divided into their various subcomponents.

The secondary aim of the study was to add to the existing body of research by replicating previous research on the relationships between the constructs of emotional intelligence and work engagement, and the subcomponents of each of these constructs. Regression analysis was used to assess the significance of the relationships between individual components of emotional intelligence and work engagement before and after the participation of employees in an emotional intelligence intervention.

The predictor or independent variable in the experimental design was emotional intelligence, which consisted of the subcomponents of emotional self-awareness (ESA), emotional expression (EE), emotional awareness of others (EAO), emotional reasoning (ER), emotional self-management (ESM), emotional management of others (EMO) and emotional control (EC).

The dependent variable in the design was work engagement as well as the construct's sub-elements of vigour, dedication and absorption.

The researcher compared the measured scores of the elements of emotional intelligence and the total emotional intelligence to the measured scores of the individual elements of work engagement and the total score of work engagement.

The researcher assessed the results with *p*-values smaller than .05 in order to determine whether the within-subjects' contrasts, between-subjects' contrasts and interaction statistics were significant.

It is important to know whether a relationship between two variables is *practically significant.* The coefficient of determination (R^2) is a measure of the goodness-of-fit. It can be interpreted as the proportion of variation in the response variable explained by or attributed to the fitted model (Ellis & Steyn, 2003).

Ellis and Steyn (2003) suggested the following outline for the interpretation of effect sizes:

Table 4.6
Conclusions from effect sizes (Ellis & Steyn, 2003, p. 53)

Effect size (f^2)	**Effect size**	**Values of** R^2	**Conclusions on** R^2
Smaller than .15	Small	Smaller than .13	Non-significant
.15 - .35	Medium	.13 - .25	Significant
Larger than .35	Large	Larger than .25	Practically important

4.4 Chapter summary

This chapter discussed the research design, which was an experimental, quantitative design. The chapter included a review of the general profile of the research participants and instruments, as well as the research procedures and statistical analysis applied.

The next chapter covers the research results. This includes the results of the descriptive statistics and regression analyses.

CHAPTER 5: RESEARCH RESULTS

5.1 Introduction

As stated previously, the general aim of this research was to use a controlled experimental research design to establish whether the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence and thus improve their levels of work engagement.

The study also endeavoured to add to the existing body of research by replicating previous research on the relationships between the constructs of emotional intelligence and work engagement, as well as the subcomponents of each of these constructs in a South African sample.

In this chapter, the sample selection and the manner in which the researcher conducted the intervention, are discussed. The research reports on the descriptive statistics for the sample, based on the following:

(1) ethnicity;
(2) gender;
(3) unit distribution;
(4) occupational level;
(5) age;
(6) educational level; and
(7) language preference.

The results in the context of the research questions and aims are reported, interpreted and discussed in the sections below.

5.2 Sample

The researcher called for volunteers to participate in the study from a staff complement of 473 in a medium-sized South African audit firm. Following the request, 87 employees or 18.39% of the population signed up for the study. A total of 47 of the 87

employees who signed up, opted to participate in the emotional intelligence intervention.

The researcher requested all 87 participants to complete the pre-test questionnaires for emotional intelligence (Genos EI) and work engagement (UWES), but seven participants failed to complete the post-test questionnaires, resulting in a dropout rate of 8.05%. The data of these participants was not included in the study.

The sample group (n = 80) used in the results of this study comprised of 47 (58.75%) employees who participated in the emotional intelligence intervention and 33 (41.25%) who remained part of the control group. All 47 employees completed the emotional intelligence intervention programme.

Out of the 47 who participated in the intervention, 27 (57.45%) completed the work engagement survey approximately three weeks after the emotional intelligence survey owing to a misunderstanding of the requirements. The researcher rescheduled the training for these participants so that the intervention could take place after the participants had submitted both pre-tests. Owing to the size of the sample, a number of sessions were held covering the same content. Each participant in the experimental group participated in one training session, followed by self-study and then a feedback session.

Taking the above into account, the results consisted of the data collected from the 80 employees who participated in this study. The first set of results includes the demographic profile of the sample, followed by the results relating to the empirical research questions and aims.

5.2.1 Results for ethnicity, gender, unit, occupational level, age, educational level and language

The tables below present the descriptive statistics for the research sample, based on ethnicity, gender, business or support unit distribution, occupational level, age, educational level and language preference.

The ethnicity distribution included Africans, coloureds, Indians and whites.

Table 5.1
Distribution of Ethnicity in the Sample

Ethnic group	Frequency control group	% control group	Frequency experi-mental group	% experi-mental group	Total frequency sample	Total % of sample	Total frequency population	Total % of population
African	6	18.18	11	23.40	17	21.25	145	30.66
Coloured	1	3.03	4	8.51	5	6.25	22	4.65
Indian	6	18.18	4	8.51	10	12.50	47	9.94
White	20	60.61	28	59.58	48	60.00	231	48.84
Other	-	-	-	-	-	-	28	5.91
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**	**473**	**100.00**

The table above indicates that white employees had the highest frequency in the sample (48 or 60%) as well as the population (231 or 48.84%). African employees had the second highest frequency in the sample (17 or 21.25%) and the population (145 or 30.66%).

The researcher reviewed the economically active population (EAP) at the time of the study in order to collect more information in the South African context. The EAP in South Africa, according to the Department of Labour (Department of Labour, 2017) in 2015, is indicated in table 5.2.

Table 5.2
Economically Active Population in South Africa

	Population group				
Gender	**African**	**Coloured**	**Indian**	**White**	**Total**
Male	42.10%	5.40%	1.70%	5.60%	54.80%
Female	35.30%	4.60%	1.00%	4.30%	45.20%
Total	**77.40%**	**10.00%**	**2.70%**	**9.90%**	**100.00%**

The table indicates that there were fewer African (21.25%) and coloured (6.25%) employees as a percentage of the total sample who participated in the study compared to the EAP of 77.40% and 10.00%, respectively. More Indian (12.50%) and white (60.00%) employees, as a percentage of the total sample, participated in the study compared to the EAP of 2.70% and 9.90%, respectively. The researcher did not consider the distribution of the sample to be representative of the EAP in South Africa. A potential reason for this is that the employee profile of the organisation is not representative of the EAP.

Table 5.3 indicates the gender distribution of the sample and the population.

Table 5.3
Distribution of Gender in the Sample

Gender group	Frequency control group	% of control group	Frequency of experi-mental group	% of experi-mental group	Total frequency sample	Total % sample	Total frequency population	Total % of population
Male	10	30.30	13	27.66	23	28.75	203	42.92
Female	23	69.70	34	72.34	57	71.25	270	57.08
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**	**473**	**100.00**

The percentage of frequency between male and female participants appeared to be consistent between the control and experimental group. The data shows that the participation of male employees was lower than that of female employees in both the

control and experimental groups at 30.30% and 27.66%, respectively, compared to the total population percentage of male employees of 42.92%.

The male participation in the sample (28.75%) was lower than that of the EAP of 54.80%, while female representation in the sample (71.25%) was higher than the EAP of 45.20%.

The firm involved in the study is divided into business units (assurance, outsourcing, advisory and tax) and support units that include human resources, information technology, marketing, finance and compliance. Table 5.4 indicates the distribution of the sample and population.

Table 5.4
Distribution of Business or Support Unit Participants in the Sample

Business or support unit	Frequency control group	% of control group	Frequency experi-mental group	% of experi-mental group	Total frequency	Total %
Support	4	12.12	10	21.28	14	17.50
Assurance	19	57.58	12	25.53	31	38.75
Outsourcing	-	-	7	14.89	7	8.75
Advisory	6	18.18	15	31.92	21	26.25
Tax	4	12.12	3	6.38	7	8.75
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**

Noticeable differences were evident in the distribution of the control group versus the experimental group. The assurance division had the largest participation level (57.58%) in the control group, while the advisory division had the largest participation (31.92%) in the experimental group.

A possible reason for this is that the assurance unit is client facing in the sense that employees work outside of the office at clients' premises. The other units are

predominantly office based. This could explain the lower participation of the assurance unit in the intervention.

The occupational levels in the organisation comprise clerical staff, supervisors and assistant managers, managers, senior managers, directors and equity partners, as indicated in table 5.5 below.

Table 5.5
Distribution of Occupational Level in the Sample

Occupational level	Frequency of control group	% of frequency in control group	Frequency of experi-mental group	% of frequency in experi-mental group	Total frequency	Total %
Clerical staff	15	45.46	9	19.14	24	30.00
Supervisors and assistant managers	10	30.30	23	48.94	33	41.25
Managers	2	6.06	13	27.66	15	18.75
Senior managers	3	9.09	2	4.26	5	6.25
Directors	2	6.06	-	-	2	2.50
Equity partners	1	3.03	-	-	1	1.25
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**

The clerical staff participated the most in the control group (45.46%), but their participation was lower overall (30.00%) with the inclusion of the experimental group.

It is interesting to note that entry-level management, namely the group comprising the supervisors and assistant managers group participated the most in the study overall (41.25%), and this group also had the highest participation in the experimental group (48.94%). This might indicate a specific interest in the topic at that level of management.

The managerial group represented 18.75% of the overall participation in the study, and 27.66% of the experimental group. There was a marked difference between the experimental group (27.66%) and the control group of (6.06%) for the managerial group. It is interesting to note that despite the time commitment required and perceived time pressure experienced at this level, there was such a difference between the managers who participated in the intervention versus those who chose not to.

Senior managers, directors and equity partner groups individually represented the lowest levels of participation with a collective participation of 10.00%, comprising 4.26% for the experimental group and 18.18% for the control group. A possible explanation for overall participation as well as participation in the experimental group could be work and time commitments.

Participants could select age group categories between younger than 20 years of age, 20 to 30, 30 to 40, 40 to 50 and above 50 as part of the biographical questionnaire.

Table 5.6
Distribution of Age Groups in the Sample

Age group	Frequency of control group	% of frequency in control group	Frequency of experi-mental group	% of frequency in experi-mental group	Total frequency	Total %
20 to 30	19	57.58	23	48.93	42	52.50
30 to 40	8	24.24	10	21.28	18	22.50
40 to 50	5	15.15	8	17.02	13	16.25
Above 50	1	3.03	6	12.77	7	8.75
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**

No employees identified themselves as being younger than 20.

The participation of the 20 to 30 and 30 to 40 age groups was the most significant

overall, at 52.50% and 22.50% respectively. The most significant single group participation was the 20 to 30 age group. This group also had the highest frequency in both the experimental (48.93%) and control groups (57.58%).

It is interesting to note that more participants in each age category opted to form part of the experimental group, as opposed to the control group.

The distribution of the participants' educational levels is set out in the table below.

Table 5.7
Distribution of Educational Level in the Sample

Highest educational level	Frequency of control group	% of frequency in control group	Frequency of experi- mental group	% of frequency in experi- mental group	Total frequency	Total %
High school	6	18.18	8	17.02	14	17.50
Diploma	4	12.12	11	23.40	15	18.75
Bachelor's degree	5	15.15	8	17.02	13	16.25
Honours degree	17	51.52	17	36.17	34	42.50
Master's degree	1	3.03	1	2.13	2	2.50
Other	-	-	2	4.26	2	2.50
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**

The organisation is a training office for chartered accountants that also provides financial advisory services for clients. This could explain the higher percentage of bachelor's, honours and master's degree participants.

The honours degree category represented the highest level of participation with a

collective participation of 42.5%, consisting of 36.17% for the experimental group and 51.52% for the control group.

The questionnaire requested employees to identify their home language based on the 11 official languages in South Africa. The results are set out in the table below.

Table 5.8
Distribution of Language in the Sample

Language	Frequency of control group	% of frequency in control group	Frequency of experi-mental group	% of frequency in experi-mental group	Total frequency	Total %
Afrikaans	11	33.33	13	27.66	24	30.00
English	16	48.49	25	53.18	41	51.25
Xhosa	1	3.03	1	2.13	2	2.50
Venda	-	-	1	2.13	1	1.25
Southern Sotho	-	-	1	2.13	1	1.25
Northern Sotho	2	6.06	-	-	2	2.50
Tsonga	-	-	1	2.13	1	1.25
Tswana	-	-	1	2.13	1	1.25
Other	3	9.09	4	8.51	7	8.75
Totals	**33**	**100.00**	**47**	**100.00**	**80**	**100.00**

No participants reported Zulu, Ndebele or Swazi as their first language.

More than half of the participants (51.25%) selected English as their first language. This percentage changed to 81.25% when the researcher added Afrikaans to the mix. The other nine official languages represented only 18.75% of the sample.

The following subsection reports, interprets and discusses the results of the emotional intelligence questionnaires in the context of the research questions and aims.

5.3 Findings: Evaluation of the emotional intelligence intervention

As stated in chapter 1, the main aim of the study was to use a controlled experimental research design to establish whether the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence, and thus improve their levels of work engagement.

The next subsection reports and interprets the results for the emotional intelligence and work engagement assessments administered during the study, as well as the results of the regression analysis.

5.3.1 Results of the emotional intelligence assessments

This subsection focuses on the interpretation of the pre- and post-test emotional intelligence scores, and links this to hypothesis 1, in which the researcher predicted that the levels of emotional intelligence of employees in the experimental group would increase significantly following their participation in an emotional intelligence intervention, while the emotional intelligence levels of employees in the control group would remain the same.

In order to assess whether the results obtained were reliable, the researcher performed a test-retest reliability. Alternate form reliability was not possible as the researcher used only one instrument of emotional intelligence. Inter-rater reliability was not applicable in this study because the instruments were completed by the participants and the scoring was by means of a pre-determined plan.

At a total scale level, the reliability estimates were .63 for the experimental group and .79 for the control group. Both were significant at the .01 level (2-tailed). The detailed results are provided in appendix C.

The researcher predicted that the emotional intelligence levels of employees in the experimental group would increase significantly following their participation in an emotional intelligence intervention, while the emotional intelligence levels of the employees in the control group would remain the same.

The results of the pre- and post-test emotional intelligence assessments are set out in the table below along with the means, standard deviations and sample sizes.

Table 5.9

Results of the Emotional Intelligence Assessments

Item	Pre-test and post-test for emotional intelligence	Intervention/no intervention	Mean	Standard deviation	n
Emotional self-awareness (ESA)	Pre-test	Intervention	40.40	26.913	47
		No intervention	49.18	26.773	33
		Total	44.03	27.037	80
	Post-test	Intervention	42.81	26.640	47
		No intervention	51.82	29.523	33
		Total	46.53	28.039	80
Emotional expression (EE)	Pre-test	Intervention	32.85	23.819	47
		No intervention	44.12	27.911	33
		Total	37.50	26.021	80
	Post-test	Intervention	44.21	28.789	47
		No intervention	49.06	28.376	33
		Total	46.21	28.540	80
Emotional awareness of others (EAO)	Pre-test	Intervention	41.19	25.741	47
		No intervention	37.91	27.610	33
		Total	39.84	26.406	80
	Post-test	Intervention	42.47	26.882	47
		No intervention	49.00	29.037	33
		Total	45.16	27.799	80
Emotional reasoning (ER)	Pre-test	Intervention	35.11	22.752	47
		No intervention	43.67	27.418	33
		Total	38.64	24.978	80
	Post-test	Intervention	46.34	27.440	47
		No intervention	49.09	27.949	33
		Total	47.48	27.508	80
Emotional self-management (ESM)	Pre-test	Intervention	30.96	24.217	47
		No intervention	42.58	24.865	33
		Total	35.75	25.001	80
	Post-test	Intervention	35.96	24.691	47
		No intervention	47.21	26.671	33
		Total	40.60	25.966	80
Emotional management of others (EMO)	Pre-test	Intervention	36.30	21.635	47
		No intervention	47.45	24.303	33
		Total	40.90	23.288	80
	Post-test	Intervention	38.66	28.222	47
		No intervention	46.00	26.286	33
		Total	41.69	27.511	80

Emotional Control (EC)	Pre-test	Intervention	43.09	24.753	47
		No intervention	51.97	22.488	33
		Total	46.75	24.104	80
	Post-test	Intervention	45.70	28.492	47
		No intervention	53.21	25.801	33
		Total	48.80	27.499	80
Emotional intelligence TOTAL (EI)	**Pre-test**	**Intervention**	**259.89**	**118.676**	**47**
		No intervention	**316.88**	**131.300**	**33**
		Total	**283.40**	**126.416**	**80**
	Post-test	**Intervention**	**296.15**	**149.088**	**47**
		No intervention	**345.39**	**145.937**	**33**
		Total	**316.46**	**148.877**	**80**

The table above contains the mean score of each of the subcategories of emotional intelligence. The total emotional intelligence score is the aggregate of these mean scores and not the total of the raw scores. The results might have been different if an alternative method of aggregation had been used (e.g. aggregating the raw scores and then determining the mean total score). There are equal number of items in each subcategory and there is no weighting attached to each individual item or subcategory.

The results indicate that the mean of all the reported post-test scores was higher than the pre-test scores, with the exception of the emotional management of others where the post-test score for the control group was 46.00 compared to a pre-test score of 47.45.

Without any further analysis, the research indicated higher scores for emotional intelligence after the intervention than before. However, the results also indicated that the emotional intelligence levels were higher for all post-tests in the control group than the pre-test results, with the exception of the emotional management of others. This shows that there was a change in the levels of the pre- and post-test for the control group, even though there was no intervention.

The scores for the experimental group where employees participated in the intervention, indicate that the emotional intelligence levels were higher for all post-tests in the group when compared to the pre-test scores.

A possible reason for the increase in both experimental and control group is that the participants became familiar with the instrument and possibly realised that a higher score would be required. The participation in a study that is out of the ordinary in an accounting practice may have also have influenced participants to be assess themselves as more emotionally intelligent in the second assessment.

In order for hypothesis 1 to be true, the change between the pre- and post-test should have been significant for the experimental group but not significant for the control group.

The researcher used a factorial ANOVA with a mixed design to investigate the hypotheses. The between-subjects' variable was the experimental and control groups, and the within-subjects' variable was the pre- and post-test. Table 5.10 reflects the results.

Table 5.10
Summary of Relationships in the Results for Emotional Intelligence

	Difference between pre- and post-test (within-subjects' contrast)			**Difference between intervention and no intervention (between-subjects' effects)**			**Interaction**		
Emotional Intelligence scale	**F**	**Sig**	**Partial eta squared**	**F**	**Sig.**	**Partial eta squared**	**F**	**Sig.**	**Partial eta squared**
ESA	.844	.361*	.011	2.544	.115*	.032	.002	.966*	.000
EE	9.349	.003^	.107	2.102	.151*	.026	1.451	.232*	.018
EAO	4.806	.031^	.058	0.088	.768*	.001	3.027	.086*	.037
ER	10.878	.001^	.122	1.097	.298*	.014	1.323	.254*	.017
ESM	2.983	.088*	.037	5.343	.023^	.064	.004	.948*	.000
EMO	.030	.862*	.000	3.291	.073*	.040	.535	.467*	.007
EC	.478	.491*	.006	2.558	.114*	.032	.061	.806*	.001
Total emotional intelligence	**5.689**	**.020^**	**.068**	**3.637**	**.060***	**.045**	**.081**	**.766***	**.001**

^ - Denotes a significant difference because the value is below .05.

* - Denotes an insignificant difference because the value is above .05.

The *F*-test was used to test the following hypothesis: In the population from which the two or more samples were drawn, there was (1) no difference between the two or more means, or equivalently (2) there was no relationship between membership in any particular group and score on the response variable (Rosenthal & Rosnow, 1984).

In conjunction with the *F*-value, the table provides a *p*-value in the ”Sig.” column. The *p*-values indicate the probability that the obtained value or larger could be achieved under the assumption that the null hypothesis (e.g. no difference between the means) is true. A small *p*-value (smaller than .05) is deemed sufficient evidence that the result is statistically significant (Ellis & Steyn, 2003).

According to table 5.9, all of the post-test scores were higher on average than the pre-test scores except for the emotional management of others, where the pre-test score for the control group was 47.45, which was higher compared to the post-test score of 46.00.

The “within-subjects’ contrasts” column in table 5.10 indicates the results of the differences between the pre- and post-tests, regardless of the experimental or control group allocation. The researcher determined on the basis of the above table that the following four of the nine reported differences between the pre- and post-test were statistically significant ($p < .05$):

(1) emotional expression (EE) (p = .003);
(2) emotional awareness of others (EAO) (p = .031);
(3) emotional reasoning (ER) (p = .001); and
(4) total emotional intelligence (p = .020).

Statistical significance does not necessarily imply that the results are significant in practice, as these tests tend to yield small *p*-values (indicating significance) as the size of the data increases (Ellis & Steyn, 2003).

It is important to determine whether a relationship between two variables is practically significant (Ellis & Steyn, 2003). Partial eta squared is a measure of this practical significance and it is therefore only meaningful to look at this score when the relationship is statistically significant.

Eta squared (η2) is a measure of effect size, and η2 ranges between 0 and 1. As a rule, Cohen's (1988) effect size is interpreted as follows:

(1) .01 – small
(2) .09 – medium
(3) .25 – large

Based on the interpretation of the data in table 5.10, there were no large differences between the pre- and post-test. Emotional expression (.107) and emotional reasoning (.122) were of medium significance (between .09 and .25), while emotional awareness of others (.058) and total emotional intelligence (.068) were considered small (between .01 and .09).

The "difference between intervention and no intervention (between-subjects' effects)" columns in table 5.10 indicate the results of the differences between the entire experiment and control groups, regardless of whether these results were pre- or post-test.

The results indicate that none of the relationships were significant except for emotional self-management (p = .023). The practical significance of this relationship (partial eta squared = .064), however, was small (i.e. between .01 and .09) using Cohen's (1988) guidelines.

The *"interaction"* scores in table 5.10 measured whether there was a statistically significant difference between the pre- and post-test averages when the researcher compared the results of the control group with those of the experimental group. This comparison assessed hypothesis 1 where the researcher predicted that the control group's scores would remain the same or only increase slightly, while the scores of the experimental group would increase significantly. None of the interaction scores were statistically significant because all values in the "Sig." column exceeded .05.

In summary, the post-test mean scores were higher than the pre-test scores, with the exception of emotional management of others. Four of the differences between the pre- and post-test were statistically significant. The researcher did not interpret any of

the differences as large when considering the practical significance, but did interpret emotional expression and emotional reasoning as having a medium effect. None of the differences between the experimental and control groups was statistically significant except for emotional self-management, and the practical significance of this difference was small. Since none of the interaction effects were statistically significant, none of the differences were practically significant.

A possible reason for this lack of increase in the score could be the length and frequency of the intervention that occurred. This is discussed in more detail in the limitations section to this study.

The next section discusses the results of the work engagement assessments administered during the study.

5.3.2 Results of the work engagement assessments

The study required all the participants to complete two work engagement assessments – one before an emotional intelligence intervention and one after.

In order to assess whether the results obtained were reliable, the reliability estimate at a total scale level was .528 for the experimental group and .817 for the control group. Both were significant at the .01 level (2-tailed). The detailed results are contained in appendix C.

The results for work engagement related to hypothesis 2, where the researcher predicted that the work engagement levels of employees in the experimental group would increase significantly following their participation in an emotional intelligence intervention, while the work engagement levels of employees in the control group would remain the same.

The results are set out below and indicate the means and standard deviations for the individual pre- and post-test results for the subcomponents of vigour, dedication and absorption, as well as total work engagement.

The pre- and post-test results for vigour are indicated in table 5.11.

Table 5.11
Descriptive Statistics for Vigour

Pre-test/post-test for vigour	Intervention/no intervention	Mean	Standard deviation	n
Pre-test	Intervention	21.02	4.083	47
	No intervention	22.18	4.565	33
	Total	21.50	4.299	80
Post-test	Intervention	26.75	4.537	47
	No intervention	26.64	5.857	33
	Total	26.70	5.088	80

The results indicate that the total of the reported post-test scores (26.70) was higher than that of the pre-test scores (21.50). The experimental group's mean post-test score (26.75) also exceeded the mean pre-test score of 21.02.

The results also indicate that the work engagement levels for the control group were higher for the post-test (26.64) then the pre-test (22.18).

The pre- and post-test results for dedication are indicated in table 5.12 below.

Table 5.12
Descriptive Statistics for Dedication

Pre-test/ post-test for dedication	Intervention/no intervention	Mean	Standard deviation	n
Pre-test	Intervention	21.17	5.346	47
	No intervention	22.18	5.503	33
	Total	21.59	5.400	80
Post-test	Intervention	22.09	4.343	47
	No intervention	21.52	5.794	33
	Total	21.85	4.966	80

The results indicate that the total of the reported post-test scores (21.85) was higher than that of the pre-test scores (21.59). The experimental group's mean post-test

score (22.09) also exceeded the mean pre-test score of 21.17 by .92.

The results also show that the mean work engagement score for the control group relating to the post-test (21.52) was lower than the pre-test score of 22.18.

The pre- and post-test results for absorption are indicated in table 5.13 below.

Table 5.13
Descriptive Statistics for Absorption

Pre-test/ post-test for absorption	Intervention/no intervention	Mean	Standard deviation	n
Pre-test	Intervention	21.87	4.105	47
	No intervention	21.39	4.981	33
	Total	21.68	4.463	80
Post-test	Intervention	26.09	4.938	47
	No intervention	25.09	5.849	33
	Total	25.68	5.320	80

The results indicate that the total of the reported post-test scores (25.68) was higher than that of the pre-test scores (21.68). The experimental group's mean post-test score (26.09) also exceeded the mean pre-test score of 21.87, resulting in an increase of 19.30%.

The results also show that the work engagement levels relating to absorption for the control group increased by 3.70 from 21.39 to 25.09 between the pre- and post-test groups.

The pre- and post-test results for total work engagement are indicated in table 5.14 below.

Table 5.14
Descriptive Statistics for Total Work Engagement

Pre-test/ post-test for total work engagement	Intervention/no intervention	Mean	Standard deviation	N
Pre-test	Intervention	64.06	11.934	47
	No intervention	65.76	14.147	33
	Total	64.76	12.833	80
Post-test	Intervention	74.92	13.028	47
	No intervention	73.24	16.538	33
	Total	74.23	14.502	80

The results indicate that the total for the reported work engagement post-test scores (74.23) was higher than that for the pre-test scores (64.76) by 9.47. This shows an overall increase of 14.62%. The experimental group's mean post-test score (74.92) also exceeded the mean pre-test score of 64.06, resulting in an increase of 10.86 or 16.95%.

The results show that the total work engagement levels for the control group increased by 7.48 or 11.37% from 65.76 to 73.24 between the pre- and post-test groups.

In summary, the post-test results were higher for vigour, dedication and absorption, as well as the total for work engagement, than the reported pre-test results. This occurred in both the experimental and the control groups, with the exception of the work engagement levels relating to dedication for the control group, where the score decreased by .66 from 22.18 to 21.52 between the pre- and post-test groups.

A possible reason for the increase in both experimental and control group scores is that the participants became familiar with the instrument and possibly realised that a higher score would be required. This phenomenon is possible as employees may have been tempted to present a more positive result "fake positive" especially since this was

the expected outcome of the study.

In order for hypothesis 2 to be accepted as true, the change between the pre- and post-test should have been significant for the experimental group, but not significant for the control group.

The researcher used a mixed design factorial ANOVA to investigate the hypotheses. The within-subjects' contrasts were the differences between the pre- and post-tests, and the between-subjects' variable considered the differences between the experimental and control groups as a whole, without considering the pre- and post-tests. Table 5.15 contains the results.

Table 5.15
Summary of the Relationships in the Results for Work Engagement

	Difference between pre- and post-test (within-subjects' contrast)			**Difference between intervention and no intervention (between subjects' effects)**			**Interaction**		
Work engagement scale	**F**	**Sig**	**Partial eta squared**	**F**	**Sig.**	**Partial eta squared**	**F**	**Sig.**	**Partial eta squared**
Vigour	156.72	.000^	.668	.28	.598*	.004	2.44	.123*	.030
Dedication	.08	.774*	.001	.04	.842*	.001	3.37	.070*	.041
Absorption	81.36	.000^	.511	.51	.477*	.007	.35	.558*	.004
Total work engagement	**68.50**	**.000^**	**.468**	**.00**	**.997***	**.000**	**2.31**	**.133***	**.029**

^ - Denotes a significant difference between the pre- and post-test because the value is below 0.05.

* - Denotes an insignificant difference between the pre- and post-test because the value is above 0.05

The *F*-test was used in conjunction with a *p*-value. As mentioned above, the researcher had to compare this *p*-value to alpha to determine whether the variance was significant. If the *p*-value was less than alpha ($p < .05$), the researcher could regard *F* as statistically significant.

The researcher was able to determine from the above that the difference between the pre- and post-test means (within-subjects' contrasts) in table 5.15 for vigour (.000),

absorption (.000) and total work engagement (.000) was statistically significant ($p < .05$), while the subscale of dedication (.774) was not.

Owing to the fact that partial eta squared is a measure of practical significance, it is only meaningful to consider this score when the relationship is statistically significant. The partial eta squared value for all the significant relationships indicated that the differences were large for vigour (.668), absorption (.511) and total work engagement (.468) (partial eta squared above .25), according to Cohen's (1988) interpretation, as explained in section 5.3.1 above.

The results used for the analysis of the differences in levels of work engagement between the experimental and control groups are contained in the "difference between intervention and no intervention (between-subjects' effects)" column. This does not indicate whether the results were pre- or post-test.

The results demonstrate that none of the relationships were statistically significant as all the *p*-values exceeded .05. Hence it was deemed futile to assess the practical significance.

The "interaction*"* scores in table 5.15 measured whether there was a statistically significant difference between the pre- and post-test means when the researcher compared the results of the control group to those of the experimental group. This comparison assessed the second part of hypothesis 1, in which the researcher predicted that the control group's scores would remain the same or only increase slightly, while the scores of the experimental group would increase significantly.

The results show that none of the relationships were statistically significant because all the *p*-values exceeded .05. It was therefore futile to assess the practical significance.

The interaction results formed the basis of the conclusion of the primary research question, and even though none of these relationships were statistically significant, the researcher elected to include the graphical representation of the interaction scores to further support the results obtained.

The graphs below illustrate the estimated marginal means for the vigour, dedication and absorption pre- and post-tests.

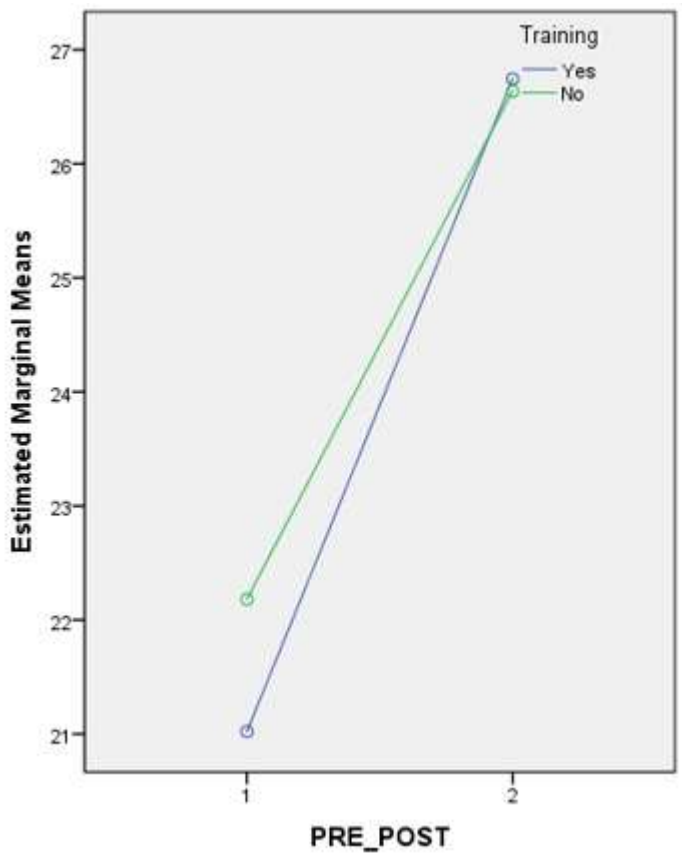


Figure 5.1. Estimated Marginal Means of Vigour Pre- and Post-test

The graph reflects the significant increase in the pre- and post-test means for both the experimental group and control group. The practical significance of this difference was large. However, the difference between the experimental group and control group was insignificant. The researcher expected the graph for the control group to be fairly horizontal for the hypothesis to be true. The researcher therefore concluded that the intervention did not result in a significant increase in vigour.

The graph below represents the effect of the intervention on dedication.

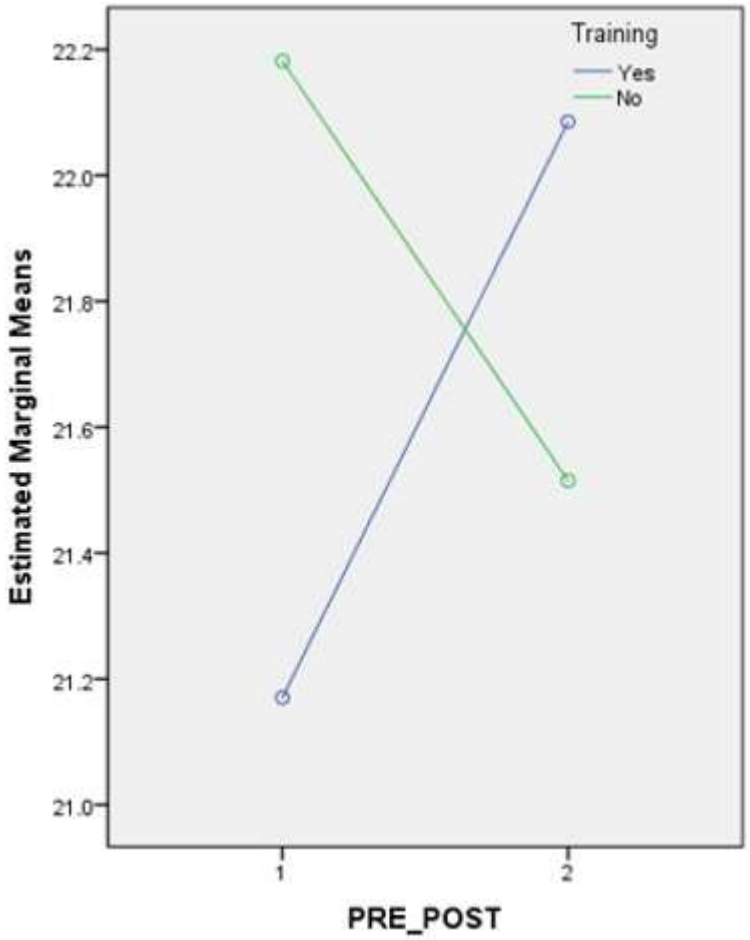


Figure 5.2. Estimated Marginal Means of Dedication Pre- and Post-test

The above graph suggests an interaction between the pre- and post-test means when the researcher compared the results of the control group to those of the experimental group. However, the *F*-test and related *p*-value scores in table 5.15 indicated that there was no statistically significant difference between the pre-and post-test means of the dedication subscale. The researcher therefore concluded that the intervention did not result in a significant increase in the dedication subscale.

The graph below represents the effect of the intervention on absorption.

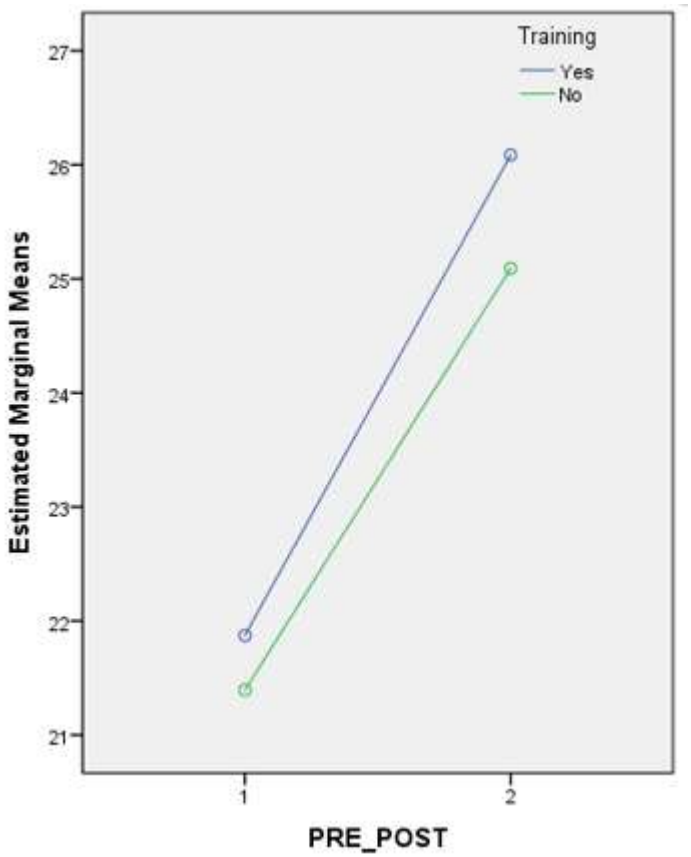


Figure 5.3. Estimated Marginal means of Absorption Pre- and Post-test

The graph reflects the significant increase in the pre- and post-test absorption means for both the experimental group and control group.

The F-test and related *p*-value scores in table 5.15 indicate that the practical significance of this difference was large, but the difference between the experimental group and control group was insignificant. The researcher therefore concluded that the intervention did not result in a significant increase in absorption.

The graph below represents the effect of the intervention on total work engagement.

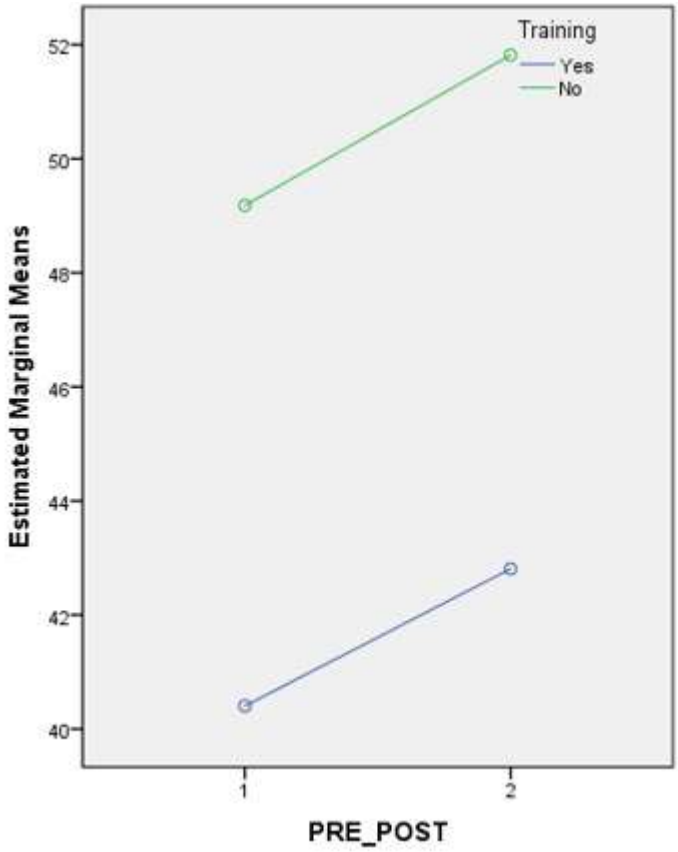


Figure 5.4. Estimated Marginal Means of Total Work Engagement Pre- and Post-test

The graph reflects the significant increase in the pre-test and post-test means for both the experimental and control groups contained in the *F*-test and related *p*-value scores in table 5.15. The practical significance of this difference was large. However, the difference between the experimental group and control group was insignificant. Hence the conclusion drawn was that the intervention did not result in a significant increase in total work engagement.

In summary, the difference in the pre- and post-test means for vigour, absorption and total work engagement was statistically significant, while the subscale of dedication was not. The researcher interpreted the differences between the pre- and post-test as large from a practical significance perspective for vigour, absorption and total work engagement. None of the differences between the mean scores of the experimental and control groups were statistically significant, and none of the interaction scores were statistically significant either.

This subsection discussed the pre- and post-test results for work engagement and its subcomponents. The next section reviews the results of the regression analyses of the relationships between emotional intelligence and work engagement.

5.3.3 Results of the regression analyses of the relationships between emotional intelligence and work engagement

This section assesses the significance of the relationships between individual components of emotional intelligence and work engagement before and after the employees' participation in an emotional intelligence intervention.

In hypotheses 3 and 4 the researcher anticipated that there would be positive and significant relationships between the levels of emotional intelligence and work engagement both before and after the intervention, and that the levels of emotional intelligence would significantly predict the levels of work engagement.

The secondary aim of the study was to add to the existing body of research by replicating previous research on the relationships between the constructs of emotional intelligence and work engagement and the subcomponents of each of these constructs.

The independent variable or predictor in the experimental design was emotional intelligence.

Emotional intelligence comprises the following subcomponents: emotional self-awareness (ESA), emotional expression (EE), emotional awareness of others (EAO), emotional reasoning (ER), emotional self-management (ESM), emotional management of others (EMO) and emotional control (EC).

The dependent variable in the design was work engagement as well as the construct's subelements of vigour, dedication and absorption.

The researcher used regression analysis to compare the measured scores of the

elements of emotional intelligence and the total emotional intelligence to the measured scores of the individual elements of work engagement and the total score of work engagement.

The table below indicates the results of these relationships.

Table 5.16
Emotional Intelligence Compared to Work Engagement

Independent variables (predictors)	Dependent variables	R	R Square	Adjusted R Square	Sig. F	Significant individual predictors
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test total Work Engagement	.415	.173	.092	.049^	None
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test Vigour	.470	.221	.145	.010^	ESM (0.045)
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test Dedication	.385	.148	.066	.102*	None
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test Absorption	.316	.100	.012	.350*	None
Post-test ESA, EE, EAO, ER, ESM, EMO, EC	Post-test Vigour	.521	.272	.201	.001^	None
Post-test ESA, EE, EAO, ER, ESM, EMO, EC	Post-test Dedication	.532	.283	.213	.001^	None
Post-test ESA, EE, EAO, ER, ESM, EMO, EC	Post-test Absorption	.387	.150	.067	.099*	None
Post-test EI TOTAL	Post-test total Work engagement	.454	.206	.196	.000^	Post-test EI Total

^ - Denotes a significant relationship because the value is below alpha ($p < .05$).

* - Denotes an insignificant relationship because the value is above alpha ($p > .05$).

The researcher did not interpret the following regressions between the independent and dependent variable as significant because the *p*-value exceeded alpha ($p > .05$):

(1) Pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test dedication ($p = .102$)

(2) Pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test absorption ($p = .350$)

(3) Post-test ESA, EE, EAO, ER, ESM, EMO and EC and post-test absorption (p

= .099)

The following regressions were statistically significant where *sig. F* was below alpha, although none of the individual predictors were significant:

(1) Pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test total work engagement (p = .049)
(2) Pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test vigour (p = .010)
(3) Post-test ESA, EE, EAO, ER, ESM, EMO and EC and post-test vigour (p = .001)
(4) Post-test ESA, EE, EAO, ER, ESM, EMO and EC and post-test dedication (p = .001)
(5) Post-test EI total and post-test total work engagement (p = .000)

In addition to the above, the regression between pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test vigour (p = .010), the subfactor of ESM was considered significant when compared to the pre-test vigour at (p = .045). However, this was only considered to be marginal because it was only slightly below p = .05. See appendix D for the relationships between all the individual predictors

The regression between the pre-test ESA, EE, EAO, ER, ESM, EMO and EC and pre-test total work engagement was only marginally significant at p = .049. Table 5.16 indicates that the other four were more statistically significant because they were well below an alpha of .05.

It is important to determine whether the relationship between two variables is *practically significant.* The coefficient of determination (R^2) is a measure of the goodness-of-fit. It can be interpreted as the proportion of variation in the response variable explained by or attributed to the fitted model (Ellis & Steyn, 2003).

In the first regression in table 5.16, the R^2, value was .173, which means that the independent variables (pre-test ESA, EE, EAO, ER, ESM, EMO and EC) explained 17.3% of the variance in the dependent variable (pre-test total work engagement).

It is evident from the table that the highest *R* square value was .283, where the

independent variables for post-test ESA, EE, EAO, ER, ESM, EMO and EC predicted 28.3% of the dependent variable post-test dedication.

According to Ellis and Steyn (2003), the following conclusions are adequate for the interpretation of effect sizes:

Table 5.17
Conclusions Relating to Effect Sizes

Effect size (f^2)	**Effect size**	**Values of** R^2	**Conclusions on** R^2
Smaller than .15	Small	Smaller than .13	Non-significant
.15 - .35	Medium	.13 - .25	Significant
Larger than .35	Large	Larger than .25	Practically important

When the recommendations in the table above were applied to the results indicating $p < .05$, it was found that all the effect sizes were at least medium, and all conclusions regarding R^2 were at least significant, as indicated in table 5.18.

Table 5.18
Effect Sizes and Conclusions regarding R Squared

Independent variables (predictors)	**Dependent variables**	**R squared**	**Sig. F**	**Effect size**	**Conclusions regarding** R^2
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test total Work engagement	.173	.049	Medium	Significant
Pre-test ESA, EE, EAO, ER, ESM, EMO, EC	Pre-test Vigour	.221	.010	Medium	Significant
Post-test ESA, EE, EAO, ER, ESM, EMO, EC	Post-test Vigour	.272	.001	Large	Practically important
Post-test ESA, EE, EAO, ER, ESM, EMO, EC	Post-test Dedication	.283	.001	Large	Practically important
Post-test EI TOTAL	Post-test total Work engagement	.206	.000	Medium	Significant

However, in the model summary in table 5.16, which indicates the comparison between emotional intelligence and work engagement and the significance of

individual predictors, there were no statistically significant predictors in which p < .05. See appendix D for additional results.

In the above example which examined the prediction of post-test vigour by the independent variables (pre-test ESA, EE, EAO, ER, ESM, EMO and EC), the *R* squared value was .272. This is interesting, because the *F*-value was significant and the *R* squared value also practically important, yet none of the individual predictors were significant (p > .05), as reflected in table 5.19.

Table 5.19
Results for Regression of Post-test ESA, EE, EAO, ER, ESM, EMO and EC to Post-test Vigour

	Unstandardised coefficients		Standardised coefficients			Collinearity statistics	
Model	B	Std. error	Beta	T	Sig.	Tolerance	VIF
(Constant)	21.922	1.281		17.110	.000		
2ESA	-.013	.026	-.074	-0.515	.608	.485	2.061
2EE	.028	.027	.157	1.024	.309	.429	2.333
2EAO	-.046	.033	-.251	-1.374	.174	.302	3.309
2ER	.022	.026	.121	.864	.391	.514	1.947
2ESM	.032	.030	.165	1.083	.282	.437	2.287
2EMO	.060	.038	.322	1.562	.123	.238	4.208
2EC	.027	.023	.147	1.157	.251	.627	1.595

The only exception in table 5.16 was the regression between total emotional intelligence as an independent variable and total work engagement as a dependent variable. In this instance, there were no subfactors, and the regression model between the two variables was deemed significant at p = .000. Practical significance was also evident because R^2 was within the medium range at .206 or 20.6%

The conclusion drawn from the above was that even though all the independent variables as a collective predicted the dependent variable, none did so in isolation. It is important to note that the total emotional intelligence score was the aggregate of the mean scores of the subelements and not the total of the raw scores. There was also an equal number of items in each subcategory, and no weighting attached to each

individual item or subcategory. However, results might have varied if the total of the raw scores has been used.

According to Rosenthal and Rosnow (1984), the definition of regression is the prediction of the dependent variable by the independent variable, or the relationship between changes in the level of y to the level of x (Rosenthal & Rosnow, 1984).

One explanation for the finding could be multicollinearity, where the independent variables correlate too much with each other. The researcher investigated the tolerance and variance inflation factor (VIF) to determine whether multicollinearity was a possible reason for the finding.

According to Menard (1995), the tolerance level should be more than .2, and the VIF less than 10 (Myers, 1990).

This was the case with all the results in the study – hence the researcher's conclusion that multicollinearity was not the reason for the finding. One possible reason is that a combination of the independent variables predicts the dependent variable better than any individual variable.

Frost (2017a) posits that if none of the independent variables are statistically significant, then the overall *F*-test should also not be statistically significant. Tests sometimes produce conflicting results. Disagreement is possible because the *F*-test of overall significance assesses all of the coefficients jointly, whereas the t-test for each coefficient examines each one individually. For example, the overall *F*-test might find that the coefficients are significant *jointly*, while the *t*-tests might fail to find significance *individually*. The *F*-test sums the predictive power of all independent variables and determines that it is unlikely that *all* of the coefficients equal zero. However, it is possible that each variable is not predictive enough on its own to be statistically significant. In other words, the sample provides sufficient evidence to conclude that the model is significant, but not enough to conclude that any individual variable is significant (Frost, 2017a).

A significant overall *F*-test might determine that the coefficients are *jointly* not all equal

to zero, while the tests for individual coefficients might determine that all of them are *individually* equal to zero. Another conclusion one could draw is that if the *p*-value of the overall *F*-test is significant, then the regression model predicts the response variable better than the means of the response (Frost, 2017b).

A number of regression models have achieved overall significance, suggesting that the combination of predictors offers a significantly better prediction of the dependent variable than simply using the mean of the dependent variable. In terms of the effect size of *R* squared, a few models can be regarded as practically important.

However, despite the overall or total model being significant, in the current study, the individual predictors were mostly not. This was not the result of multicollinearity because all the diagnostics were within expected limits (i.e. the VIF and tolerance scores). The researcher thus determined that a combination of independent variables explained the variance in dependent variables and not any individual predictors.

5.4 Chapter summary

In this chapter, the researcher reported and analysed the results from the pre- and post-tests as well as the effects of the intervention. The next chapter focuses on the overall conclusions, limitations and recommendations.

CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter sets out the conclusions and limitations of the research, and based on the findings, makes recommendations for the organisation involved in the study. The chapter also includes recommendations for the field of industrial and organisational psychology and possible further research.

6.2 Conclusions

The general aim of this research was to use a controlled experimental research design to establish whether or not the participation of employees in an emotional intelligence intervention would increase their levels of emotional intelligence and as a result improve their levels of work engagement.

It was envisaged that the JD-R Model of work engagement could be used to link personal resources to work engagement. If employees can maintain a high level of work engagement, they need the ability to manage all aspects of their emotional experiences in order to ensure a positive emotional state, which will produce a positive upward spiral of performance. These positive emotional states can be achieved by employees first recognising their own feelings and then managing strong emotions such as anger and anxiety.

The researcher formulated various hypotheses based on the empirical aims discussed in chapter 1. These hypotheses were set out in table 4.1 in chapter 4, and the results of the research linked to these hypotheses are discussed below.

6.2.1 Hypothesis 1

The researcher predicted that the emotional intelligence levels of employees in the experimental group would increase significantly following their participation in an emotional intelligence intervention, while the emotional intelligence levels of the

employees in the control group would remain the same. The results indicated that the post-test mean scores were higher than the pre-test scores, with the exception of emotional management of others.

Four of the differences between pre- and post-test were statistically significant, but none of the differences were considered large for the purposes of practical significance.

None of the differences between the experimental and control groups were statistically significant, except for emotional self-management, and the practical significance of this difference was interpreted as small. Since none of the interaction effects were statistically significant, none of the differences were practically significant. Hence the conclusion drawn was that the intervention did not result in a significant increase in the employees' emotional intelligence levels.

Herman (2012) suggested in his study that although the total effect results were not significant, the trends in the increased levels of total emotional intelligence means for the experimental group might be cautiously interpreted to suggest that it might be possible to develop emotional intelligence over time.

Based on the results of the current study however, it was not possible to conclude whether emotional intelligence cannot be developed at all, or whether the emotional intelligence intervention applied in the study was deficient in some or other way. Deficiencies might include, inter alia, the frequency and content of intervention programmes, which are discussed in more detail in the limitations section.

According to Zeidner, Roberts, and Matthews (2002), most intervention programmes are not specifically designed to change emotional intelligence, and hardly any systematic interventions satisfy the principles of internal and external validity. Consequently, there is little objective evidence that attests to the useful role of emotional intelligence as a predictor of success and adjustment beyond that predicted by intelligence and personality factors.

Training programmes purporting to develop emotional intelligence are widely

available, but to date, few empirical studies have appeared in the literature providing support that training results in demonstrable changes in emotional intelligence, and more significantly, whether these changes can then be traced back to more positive individual or organisational outcomes. Clarke (2006) questioned the usefulness of personality and/or mixed-model conceptualisation of emotional intelligence that underpins many training programme, arguing that research should be directed at better understanding how emotional abilities associated with the ability model of emotional intelligence might be targeted by human resource development practitioners in organisations (Clarke, 2006)

In the current study, the intervention was specifically designed to change emotional intelligence, but the content was only designed to cover an introduction to emotional intelligence, the understanding of the participant's pre-test results and one module that dealt with the enhancement of emotional self-awareness.

Given the present research and empirical knowledge, the benefits of emotional intelligence appear to reside in raising awareness of emotional issues and motivating managers to take emotional issues seriously. Psychological processes considered to be entirely cognitive or intellectual, in fact, depend on a synergy between cognition and emotion, and the development of programmes to improve emotional skills in the workplace is increasingly regarded as legitimate (Zeidner et al*.,* 2002).

Statistically, the results may also have been influenced by the relatively small sample size of 80.

6.2.2 Hypothesis 2

The researcher predicted in hypothesis 2 that the work engagement levels of employees in the experimental group would increase significantly following their participation in an emotional intelligence intervention, while the work engagement levels of employees in the control group would remain the same. The study found that the difference in the pre- and post-test means for vigour, absorption and total work engagement was statistically significant, while the subscale of dedication was not. The

researcher interpreted the differences between the pre- and post-test means as large from a practical significance perspective for vigour, absorption and total work engagement. None of the differences between the mean scores of the experimental and control groups were statistically significant. Moreover, none of the interaction effects were statistically significant and therefore none of the differences were practically significant. The researcher concluded that the intervention did not result in a significant increase in the employees' levels of work engagement.

Similar to the findings of the current study, Herman (2012) also found that none of the components of work engagement increased significantly after the emotional intelligence intervention.

The results may have been impacted by the sample size (n = 80) or the validity of the instrument. These potential limitations are discussed in the next section.

6.2.3 Hypothesis 3

With regard to hypothesis 3, the researcher anticipated that there would be positive and significant relationships between the levels of emotional intelligence and work engagement both before and after the intervention. However, the results indicated that despite the overall model being significant, the individual predictors were mostly not. The researcher there concluded that a combination of independent variables explained the variance in dependent variables and no individual predictors.

In his study, Herman (2012) hypothesised that there would be significant positive relationships between emotional intelligence (total emotional intelligence and scores on the subdimensions) and work engagement (total scores on the subdimensions). When total emotional intelligence was correlated with the subdimensions of engagement, no stable consistent associations were found.

Herman (2012) also reported isolated significant correlations between total emotional intelligence and absorption at T1, total emotional intelligence and vigour at T3, and total emotional intelligence and dedication at T3, but these were not replicated at any

of the other testing times. When total emotional intelligence was divided into the subdimensions of emotional intelligence and correlated with the subdimensions of engagement, a clearer account of the associations became apparent. The emotional management and vigour associations were replicated at T2 and T3, emotional control and vigour were replicated at T2 and T3, and EC and dedication were replicated at T1 and T3. These three associations remained stable over these measurement times and suggested a moderate stability of association between these variables. The main aspect of this finding is that the results highlighted the importance of the emotional regulation components of emotional intelligence (encapsulated in the emotional management and emotional control dimensions) in self-reported work engagement. In support of this argument, the most stable relationship evident in the results was between emotional management and dedication, because it emerged as significant at all three testing times. The correlations were low to moderate and appeared fairly stable in magnitude.

6.2.4 Hypothesis 4

In terms of hypothesis 4, the researcher expected the levels of emotional intelligence to significantly predict the levels of work engagement. It came to light that a combination of independent variables explained the variance in dependent variables and not any individual predictors. The finding was therefore that overall emotional intelligence was a significant predictor of total work engagement.

6.2.5 Summary

Table 6.1 below contains a summary of whether the hypotheses were accepted or rejected.

Table 6.1
Summary of Hypotheses Accepted or Rejected

Empirical aims	Hypotheses	Accepted/ Rejected
Levels of emotional intelligence: To assess the levels of emotional intelligence of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels increased.	The levels of emotional intelligence of employees in the experimental group will increase significantly following the participation of some in an emotional intelligence intervention, while the emotional intelligence levels of the employees in the control group will remain the same.	**Rejected**
Increase in levels of work engagement: To assess the levels of work engagement of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels increased.	The work engagement levels of employees in the experimental group will increase significantly following the participation of some in an emotional intelligence intervention, while the work engagement levels of employees in the control group will remain the same.	**Rejected**
Relationship between components of emotional intelligence and work engagement: To assess the significance of the relationships between the individual components of emotional intelligence and work engagement before and after the participation of employees in an emotional intelligence intervention.	There will be positive and significant relationships between the levels of emotional intelligence and work engagement both before and after the intervention.	**Rejected**
Relationship between overall levels of emotional intelligence and work engagement: To determine whether or not the levels of emotional intelligence predict levels of work engagement.	The levels of emotional intelligence will significantly predict the levels of work engagement.	**Accepted**

Hypothesis 1 was rejected because the researcher determined that although the post-test mean scores were higher than the pre-test scores, except for emotional management of others, none of the interaction effects were statistically or practically significant. It was therefore concluded that the intervention did not result in a significant increase in the level of emotional intelligence levels of the employees.

Hypothesis 2 was rejected because none of the differences between the mean scores of the experimental and control groups were statistically significant. Since none of the interaction effects were statistically significant, none of the differences were practically significant. It was therefore concluded that the intervention did not result in a significant increase in the employees' levels of work engagement.

Hypothesis 3 was rejected because it came to light that despite the overall model being significant, the individual predictors were mostly not. It was therefore concluded that a combination of independent variables explained the variance in dependent variables and not any individual predictors.

Hypothesis 4 was accepted because it was found that overall emotional intelligence was a significant predictor of total work engagement. The researcher anticipated that the levels of emotional intelligence would significantly predict the levels of work engagement. It was therefore concluded that a combination of independent variables explained the variance in dependent variables and not any individual predictors.

Although the total effect was significant, the results should be interpreted with caution because of the limitations of the study. The researcher could not gain access to the Genos EI to determine the score for each item. Scores were obtained for the total of each subcomponent per participant, from which a mean score was then calculated. These mean scores were aggregated to determine the score for total emotional intelligence used in the interpretation of results. The results might have changed statistically if a different method of aggregation had been used.

The secondary aim of the study was to add to the existing body of research by replicating previous research on the relationships between the constructs of emotional intelligence and work engagement and the components of each of these constructs.

The findings relating to the literature and empirical aims are summarised in table 6.2 below.

Table 6.2
Summary of Literature and Empirical Aims Achieved or not Achieved

Literature aims	**Achieved/not achieved**	**Reason**
To conceptualise the emotional intelligence construct and what it comprises from a theoretical perspective	Achieved	This was conceptualised in chapter 2.
To conceptualise the work engagement construct and what it comprises from a theoretical perspective	Achieved	This was conceptualised in chapter 3.
To determine whether or not there is a relationship between emotional intelligence and work engagement	Achieved	This was determined in chapter 3.
To determine whether or not the participation of employees in an emotional intelligence intervention can develop emotional intelligence	Achieved	This was determined in chapter 5.
To determine whether or not there are emotional intelligence development programmes that promote the development of emotional intelligence	Achieved	This was determined in chapter 4.
Empirical aims	**Achieved/not achieved**	**Reason**
To assess the levels of emotional intelligence of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels increased	Achieved	Assessed in chapter 5 and conclusions drawn in chapter 6.
To assess the levels of work engagement of employees before and after the participation of some in an emotional intelligence intervention and to determine whether or not these levels increased	Achieved	Assessed in chapter 5 and conclusions drawn in chapter 6.
To assess the significance of the relationships between the individual components of emotional intelligence and work engagement before and after the participation of some employees in an emotional intelligence intervention	Achieved	Assessed in chapter 5 and conclusions drawn in chapter 6.
To determine whether or not the levels of emotional intelligence predict levels of work engagement	Achieved	Assessed in chapter 5 and conclusions drawn in chapter 6.
To formulate recommendations for the organisation with regard to programmes aimed at developing emotional intelligence	Achieved	Formulated in chapter 6.
To suggest areas for possible future research in the field of industrial and organisational psychology regarding emotional intelligence and work engagement	Achieved	Formulated in chapter 6.

6.3 Limitations

In order to evaluate the findings of the current study holistically, important limitations

were identified which may have influenced the overall results. It was deemed necessary to interpret the results in the context of these limitations.

6.3.1 The development intervention

The researcher concluded that the intervention did not result in a significant increase in the employees' levels of emotional intelligence and that it was not possible to determine whether the current results indicated that emotional intelligence cannot be developed at all, or whether the emotional intelligence intervention applied in the current study was deficient in one or more ways.

The limitations of the study included the frequency and content of the emotional intelligence intervention.

Only one training session was held as part of the intervention, with a follow-up after a period of time. The results might have been different had training sessions been held with longer contact periods.

The content of the programme focused on the introduction to emotional intelligence, the understanding of the participant's pre-test results and one module that covered the enhancement of emotional self-awareness. The content of the intervention did not cover any of the other six emotional intelligence competencies.

The programme also relied on self-study sessions in which participants were required to reflect on and journalise their observations of emotional self-awareness. It was not possible to determine the diligence and effort invested in self-study, but this might have been a factor if participants had not been not given sufficient time (perhaps during work hours) to proactively attend to this.

The researcher considered the content of the intervention programmes, method of delivery, length of training sessions or time allowed for development to be limitations to this study.

The intervention applied in this study also requires the participation of other managers at work, whereby the participant is required to interact with the manager to discuss the participant's assessment of his or her level of emotional intelligence. The manager is requested to provide feedback on each skill, including where the participant fared well or could improve, and participants are required to document their behaviours during the meetings with the line manager that could have led to the higher of lower emotional intelligence as well and their key insights obtained from the meetings. All of these interactions are also dependent on the managers' level of emotional intelligence and whether or not they are able to provide accurate feedback.

6.3.2 The instruments

A limitation in the use of the UWES instrument in South Africa is that because of the diverse landscape of the country, it is necessary to measure work engagement levels scientifically. Since South African research frequently uses or cites the scale, it is necessary for the instrument to measure work engagement, in a valid and reliable fashion, in different South African cultural groups (Goliath-Yarde & Roodt, 2011). Owing to the fact that the sample consisted of groups with different cultural backgrounds, different mother tongues and different levels of education, the appropriateness of item content and poor understanding of items content might have been a problem. Researchers should carefully revisit, rephrase and test these factors for future use. It has been recommended that the UWES 17 only be used for white South Africans and not respondents from the coloured, Indian or black population groups. This was regarded as a limitation in the current study as the sample group also contained coloured, Indian and black participants.

As stated earlier, the researcher was unable to gain access to the Genos EI to determine the score for each item. Scores were obtained for the total of each subcomponent per participant, from which a mean score was calculated. These mean scores were then aggregated to determine the score for total emotional intelligence used in the interpretation of results. Results may statistically change if a different method of aggregation is used (e.g. aggregating the raw scores and then determining the mean total score for example).

6.3.3 The sample

A significant limitation of the study was the relatively small sample size (n = 80). According to Howell (2004), sample size is a variable that can affect the power of a test. Since a study is interested in means or differences in means, the researcher is directly or indirectly interested in the sampling distribution of the mean. The drop-out rate of approximately 8% in the current study was deemed small, but the overall sample size was a notable limitation in the research, which should be considered in future research.

Another limitation in data collection in the social sciences is the use of self-reported instruments (Babbie & Mouton, 2002). Conway (2002) asserts that the magnitude of effects may be biased because of common method variance or response bias. A relevant form of response bias in this study may have been that of socially desirable responses. This may occur when employees create a positive view of themselves by over-reporting admirable behaviours and attitudes and under-reporting behaviours and attitudes they feel might be rejected (Zummuner & Galli, 2005).

A third limitation was confounding variables. This is an uncontrolled extraneous variable that co-varies with the experimental manipulation that could undermine the validity of the experiment (Terre Blanche et al., 2006). This could pertain to situational and time-specific variables that the respondents were experiencing at the time of the assessments. This might include specific work pressures that resulted in some of the participants dropping out participants or in the poor completion of the “homework”.

It should be noted that the limitations that were identified are not unique to this study, and could form part of other experimental studies as well.

6.4 Recommendations

Two of the empirical aims in chapter 1 included the formulation of recommendations for the organisation relating to programmes that develop emotional intelligence, as

well as areas for possible further research in the field of industrial and organisational psychology with regard to emotional intelligence and work engagement.

What made the current study unique is that no notable South African studies, to the knowledge of the researcher, have investigated the link between total emotional intelligence and total work engagement – hence the fact the findings reported are exploratory in nature. The findings of this study suggest that there are links between the emotional intelligence and work engagement variables at a subdimensional level, and this could lay the foundation for further research.

6.4.1 The development intervention

The limitations in the current study include the frequency and content of the emotional intelligence training sessions. It is recommended that the organisation conduct emotional intelligence training that allows for more contact time and self-study work. Moreover, the content of the intervention should also include the other six emotional intelligence competencies.

Adequate time should be allowed (perhaps during working hours) for participants to complete the self-study sections of the intervention programme in order to maximise the intervention's learning experience.

The emotional intelligence intervention was based on a solid conceptual framework, but improvements in the intervention delivery could include the following:

(1) setting clear programme goals and behavioural outcomes;
(2) identifying a clear educational, sociocultural and developmental context for implementing the programme;
(3) integrating the emotional intelligence programme in the organisation's learning and development structures;
(4) encouraging the practice of emotional skills;
(5) ensuring that programme personnel are professionally developed; and
(6) ensuring robust experimentally and psychometrically sound designs for assessing programme effectiveness.

A further recommendation for the organisation would be to utilise the skills of I-O practitioners with emotional intelligence experience and to allow sufficient time to roll out the material.

The intervention also requires the participation of other managers at work whereby the participant is required to interact with a line manager. It is recommended that the manager's ability to provide this feedback is assessed and top management should determine whether managers are able to provide accurate feedback to participant. Organisations should decide whether this step should be part of the intervention process.

6.4.2 The instruments

The researcher was unable to gain access to the Genos EI to determine the score for each item. Scores were obtained for the total of each subcomponent per participant from which a mean score was calculated. These mean scores were then aggregated to determine the score for total emotional intelligence used in the interpretation of results. The results might have changed statistically if a different method of aggregation had been used (e.g. aggregating the raw scores and then determining the mean total score). It is recommended that the study be replicated with other variations in order to determine total emotional intelligence.

The reliance on international research instrument such as the UWES has been found to be unsuitable in a multicultural and multilinguistic setting like that in South Africa. Future research should focus on the use of South African-based research instruments which take the language proficiency of the diverse cultural groups into account. Nienaber and Martins (2015), among other researchers, have developed an instrument that measures the level of employee engagement at individual and organisational levels specifically for the South African diverse multicultural context. The instrument takes into account the different language and ethnic groups in order to achieve an unbiased assessment (Laher & Croxford, 2013).

It is recommended that the use of the UWES 17 be restricted to assessing white South Africans and not respondents from coloured, Indian or black population groups.

6.4.3 The sample

The researcher recommends a replication of the study with a larger sample. Future study could replicate this study at a larger organisation also in the audit and accounting industry.

The researcher did not consider the distribution of the sample to be representative of the economically active population (both race and gender) in South Africa. Future research could perhaps focus on a sample that is more representative of the economically active population.

Although the split between male and female was consistent for the pre- and post-test, the participation of males versus females was significantly lower. Future research could focus more on a sample comprising a higher male participation percentage.

Junior-level staff and entry-level managers participated the most in the study. The researcher surmised that participation at higher levels in the organisation was lower because of time constraints. Future research could focus on attracting and evaluating higher occupational levels in the organisation.

The 20 to 30 age group constituted the most significant participation. Future research could possibly target participants older than 40.

More than half of the participants indicated English as their first language, and when Afrikaans was added to the mix, the total percentage increased to 81.25%. This resulted in the other nine official languages only representing 18.75% of the sample. Future research could possibly include participants whose first language is not English or Afrikaans, thereby making the study more representative of the South African population.

6.5 Chapter summary

The general aim of this research was to use a controlled experimental research design to establish whether or not the participation of employees in an emotional intelligence intervention could increase their levels of emotional intelligence and thus improve their levels of work engagement.

The results of the study indicated that an emotional intelligence intervention did not result in a significant increase in the emotional intelligence or work engagement levels of the participants.

The study also determined that individual components of emotional intelligence do not predict levels of work engagement, but a combination of independent variables explained the variance in the dependent variables. It was also found that a combination of independent variables explained the variance in the dependent variable and not any individual predictors.

In conclusion, a number of limitations of the study were discussed and recommendations formulated for the organisation and the field of industrial and organisational psychology.

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APPENDIX A: BIOGRAPHICAL QUESTIONAIRE AND UWES

1. Name and surname

2. Job level
   - 1
   - 2
   - 3
   - 4
   - 5
   - 6

3. Unit
   - *Support*
   - *Assurance*
   - *Outsourcing*
   - *Advisory*
   - *Tax*

4. Gender
   - *Male*
   - *Female*

5. Age

6. Ethnic group
   - *Black*
   - *Coloured*
   - *White*
   - *Indian*
   - *Other (please specify)*

7. Educational qualifications

8. Home language
   - *Afrikaans*
   - *English*
   - *Xhosa*
   - *Venda*
   - *Zulu*

- *Ndebele*
- *Southern Sotho*
- *Northern Sotho*
- *Tsonga*
- *Tswana*
- *Swazi*
- *Other (please specify)*

9. At my work, I feel bursting with energy. (VI1)

0 - Never

1 - Almost never (a few times a year or less)

2 - Rarely (once a month or less)

3 - Sometimes (a few times a month)

4 - Often (once a week)

5 - Very often (a few times a week)

6 - Always (every day)

[The items below had the same Likert scale as 9 above.]

10. I find the work that I do full of meaning and purpose. (DE1)
11. Time flies when I'm working. (AB1)
12. At my job, I feel strong and vigorous. (VI2)
13. I am enthusiastic about my job. (DE2)
14. When I am working, I forget everything else around me. (AB2)
15. My job inspires me. (DE3)
16. When I get up in the morning, I feel like going to work. (VI3)
17. I feel happy when I am working intensely. (AB3)
18. I am proud of the work that I do. (DE4)
19. I am immersed in my work. (AB4)
20. I can continue working for very long periods at a time. (VI4)
21. To me, my job is challenging. (DE5)
22. I get carried away when I'm working. (AB5)
23. At my job, I am very resilient, mentally. (VI5)
24. It is difficult to detach myself from my job. (AB6)
25. At my work I always persevere, even when things do not go well. (VI6)

APPENDIX B: GENOS EI INVENTORY ITEMS

Items denoted with an (R) are negatively keyed. Consequently, these items need to be reverse scored prior to summing the items.

Emotional self-awareness

1. I am aware of things that upset me at work.
8. I am aware of when I am feeling negative at work.
15. I am aware of how my feelings influence the way I respond to colleagues.
22. I am aware of my body language at work.
29. I am aware of my mood state at work.
36. I am aware of the tone of voice I use to communicate with others at work.
43. I fail to recognise how my feelings drive my behaviour at work. (R)
50. I am aware of how my feelings influence the decisions I make at work.
57. I find it difficult to identify my feelings on issues at work. (R)
63. I am aware of things that make me feel positive at work.

Emotional expression

2. I effectively express how I feel about issues at work.
11. I express how I feel to the wrong people at work. (R)
16. I express positive emotions I experience at work inappropriately. (R)
23. I express how I feel at the appropriate time.
37. I provide positive feedback to colleagues.
44. When I am happy at work I express how I feel effectively.
51. When someone upsets me at work I express how I feel effectively.
58. I effectively express optimism at work.
65. I have trouble finding the right words to express how I feel at work. (R)
70. When I get frustrated with something at work I discuss my frustration appropriately.

Emotional awareness of others

3. I am aware of the things that make colleagues feel satisfied at work.
9. I find it difficult to identify the things that motivate people at work. (R)
17. I fail to identify the way people respond to me when building rapport. (R)
24. I understand the things that cause others to feel engaged at work.
31. I demonstrate an understanding of others' feelings at work.
38. I fail to recognise when colleagues' emotional reactions are inappropriate. (R)
45. I identify others' non-verbal emotional cues (e.g., body language).
52. I understand the things that make people feel optimistic at work.
59. I understand what makes people feel valued at work.
66. I identify the way people feel about issues at work.

Emotional reasoning

4. I ask others how they feel about different solutions when problem solving at work.

10. I demonstrate to others that I have considered their feelings in decisions I make at work.

18. I consider the organisation's values when making important decisions.

25. I demonstrate to others that I have considered my own feelings when making decisions at work.

32. I communicate decisions at work in a way that captures others' attention

39. I gain stakeholders' commitment to decisions I make at work.

46. I appropriately communicate decisions to stakeholders.

53. I consider the way others may react to decisions when communicating them.

60. I take into account both technical information and the way I feel about different choices when making decisions at work.

67. I focus solely on facts and technical information related to problems when trying to derive a solution. (R)

Emotional self-management

5. I take criticism from colleagues personally. (R)

19. I engage in activities that make me feel positive at work.

26. I ruminate about things that anger me at work. (R)

33. I effectively deal with things that annoy me at work.

40. I appropriately respond to colleagues who frustrate me at work.

47. I demonstrate positive moods and emotions at work.

54. I quickly adjust to new conditions at work.

61. I fail to handle stressful situations at work effectively. (R)

62. I respond to events that frustrate me appropriately.

69. I explore the causes of things that upset me at work.

Emotional management of others

6. I create a positive working environment for others.

12. I fail to get colleagues to cooperate. (R)

13. I motivate others towards work-related goals.

20. When necessary I effectively demonstrate empathy to colleagues

27. I am effective in helping others feel positive at work.

34. I help people find effective ways of responding to upsetting events.

41. When colleagues are disappointed about something I help them feel differently about the situation.

48. I help people deal with issues that cause them frustration at work.

55. I don't know what to do or say when colleagues get upset at work. (R)

64. I fail to resolve emotional situations at work effectively. (R)

Emotional self-control

7. I demonstrate enthusiasm appropriately at work

14. I remain focused when anxious about something at work.

21. I behave inappropriately when angry at work. (R)

28. I demonstrate excitement at work appropriately.

30. When I am under stress I become impulsive. (R)

35. I fail to control my temper at work. (R)

42. I hold back my initial reaction when something upsets me at work.

49. I am impatient when things don't get done as planned at work. (R)

56. When upset at work I still think clearly.

68. I fail to keep calm in difficult situations at work.

APPENDIX C: TEST RE-TEST RELIABILITY

CORRELATIONS FOR UWES

Attended intervention			Total 1VI	Total 1DE	Total 1AB	Total 1ES	Total 2VI	Total 2DE	Total 2AB	Total 2ES
Yes (N = 20)	Total 1VI	Pearson correlation	1	.689**	.662**	.895**	**.527***	.482*	.214	.436
		Sig. (2-tailed)		.001	.001	.000	.017	.031	.365	.055
	Total 1DE	Pearson correlation	.689**	1	.603**	.884**	.521*	**.600****	.248	.485*
		Sig. (2-tailed)	.001		.005	.000	.018	.005	.291	.030
	Total 1AB	Pearson correlation	.662**	.603**	1	.848**	.514*	.385	**.406**	.466*
		Sig. (2-tailed)	.001	.005		.000	.020	.094	.076	.038
	Total 1ES	Pearson correlation	.895**	.884**	.848**	1	.594**	.565**	.325	**.528***
		Sig. (2-tailed)	.000	.000	.000		.006	.010	.162	.017
	Total 2VI	Pearson correlation	.527*	.521*	.514*	.594**	1	.860**	.782**	.940**
		Sig. (2-tailed)	.017	.018	.020	.006		.000	.000	.000
	Total 2DE	Pearson correlation	.482*	.600**	.385	.565**	.860**	1	.840**	.954**
		Sig. (2-tailed)	.031	.005	.094	.010	.000		.000	.000
	Total 2AB	Pearson correlation	.214	.248	.406	.325	.782**	.840**	1	.927**
		Sig. (2-tailed)	.365	.291	.076	.162	.000	.000		.000
	Total 2ES	Pearson correlation	.436	.485*	.466*	.528*	.940**	.954**	.927**	1
		Sig. (2-tailed)	.055	.030	.038	.017	.000	.000	.000	
Yes but late ES (N = 27)	Total 1VI	Pearson correlation	1	.718**	.693**	.888**	**.811****	.788**	.683**	.798**
		Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	Total 1DE	Pearson correlation	.718**	1	.630**	.911**	.462*	**.708****	.543**	.602**
		Sig. (2-tailed)	.000		.000	.000	.015	.000	.003	.001
	Total 1AB	Pearson correlation	.693**	.630**	1	.856**	.679**	.648**	**.800****	.755**
		Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	Total 1ES	Pearson correlation	.888**	.911**	.856**	1	.703**	.802**	.743**	**.792****
		Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	Total 2VI	Pearson correlation	.811**	.462*	.679**	.703**	1	.837**	.857**	.945**
		Sig. (2-tailed)	.000	.015	.000	.000		.000	.000	.000
	Total 2DE	Pearson correlation	.788**	.708**	.648**	.802**	.837**	1	.837**	.938**
		Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000
	Total 2AB	Pearson correlation	.683**	.543**	.800**	.743**	.857**	.837**	1	.955**
		Sig. (2-tailed)	.000	.003	.000	.000	.000	.000		.000
	Total 2ES	Pearson correlation	.798**	.602**	.755**	.792**	.945**	.938**	.955**	1
		Sig. (2-tailed)	.000	.001	.000	.000	.000	.000	.000	

No (N = 33)	Total 1VI	Pearson correlation	1	.828**	.814**	.932**	**.777****	.809**	.691**	.803**
		Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	Total 1DE	Pearson correlation	.828**	1	.831**	.949**	.688**	**.822****	.657**	.764**
		Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000
	Total 1AB	Pearson correlation	.814**	.831**	1	.938**	.621**	.726**	**.749****	.739**
		Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000
	Total 1ES	Pearson correlation	.932**	.949**	.938**	1	.737**	.837**	.742**	**.817****
		Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000
	Total 2VI	Pearson correlation	.777**	.688**	.621**	.737**	1	.903**	.787**	.949**
		Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000
	Total 2DE	Pearson correlation	.809**	.822**	.726**	.837**	.903**	1	.829**	.963**
		Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000
	Total 2AB	Pearson correlation	.691**	.657**	.749**	.742**	.787**	.829**	1	.923**
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000
	Total 2ES	Pearson correlation	.803**	.764**	.739**	.817**	.949**	.963**	.923**	1
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).

CORRELATIONS FOR GENOS EI

Attended training			**1EI total**	**2EI total**
Yes (N = 20)	1EI Total	Pearson correlation	1	**.626****
		Sig. (2-tailed)		.003
	2EI Total	Pearson correlation	.626**	1
		Sig. (2-tailed)	.003	
Yes but late ES (N = 27)	1EI Total	Pearson correlation	1	**.379**
		Sig. (2-tailed)		.051
	2EI Total	Pearson correlation	.379	1
		Sig. (2-tailed)	.051	
No (N = 33)	1EI Total	Pearson correlation	1	**.793****
		Sig. (2-tailed)		.000
	2EI Total	Pearson correlation	.793**	1
		Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

APPENDIX D: INDIVIDUAL PREDICTORS – EMOTIONAL INTELLIGENCE COMPARED TO WORK ENGAGEMENT

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.415[a]	.173	.092	12.2274	.173	2.146	7	72	.049

a. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	2245.816	7	320.831	2.146	.049[b]
	Residual	10764.672	72	149.509		
	Total	13010.488	79			

a. Dependent variable: Total 1ES

b. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	54.672	3.635		15.042	.000		
	1ESA	.022	.066	.047	.334	.739	.587	1.704
	1EE	.081	.079	.164	1.019	.312	.443	2.259
	1EAO	.005	.078	.010	.065	.948	.444	2.250
	1ER	.032	.072	.062	.441	.661	.583	1.717
	1ESM	.116	.074	.226	1.568	.121	.555	1.803
	1EMO	-.011	.094	-.020	-.119	.906	.392	2.551
	1EC	.021	.064	.039	.323	.748	.803	1.246

a. Dependent variable: Total 1ES (pre-test total work engagement)

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.470[a]	.221	.145	3.975	.221	2.918	7	72	.010

a. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	322.637	7	46.091	2.918	.010[b]
	Residual	1137.363	72	15.797		
	Total	1460.000	79			

a. Dependent variable: Total 1VI

b. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	17.571	1.181		14.872	.000		
	1ESA	-.008	.022	-.051	-.379	.706	.587	1.704
	1EE	.021	.026	.127	.810	.421	.443	2.259
	1EAO	.003	.025	.021	.134	.894	.444	2.250
	1ER	.009	.023	.051	.374	.709	.583	1.717
	1ESM	.049	.024	.284	2.035	**.045**	.555	1.803
	1EMO	.010	.031	.055	.329	.743	.392	2.551
	1EC	.019	.021	.104	.897	.373	.803	1.246

a. Dependent variable: Total 1VI

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.385[a]	.148	.066	5.219	.148	1.794	7	72	.102

a. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	342.005	7	48.858	1.794	.102[b]
	Residual	1961.382	72	27.241		
	Total	2303.388	79			

a. Dependent variable: Total 1DE

b. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	17.853	1.551		11.507	.000		
	1ESA	.026	.028	.131	.925	.358	.587	1.704
	1EE	.039	.034	.186	1.138	.259	.443	2.259
	1EAO	-.009	.033	-.043	-.262	.794	.444	2.250
	1ER	.015	.031	.069	.483	.631	.583	1.717
	1ESM	.031	.032	.143	.982	.330	.555	1.803
	1EMO	-.001	.040	-.006	-.034	.973	.392	2.551
	1EC	-.003	.027	-.014	-.113	.910	.803	1.246

a. Dependent variable: Total 1DE

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.316[a]	.100	.012	4.436	.100	1.137	7	72	.350

a. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	156.684	7	22.383	1.137	.350[b]
	Residual	1416.866	72	19.679		
	Total	1573.550	79			

a. Dependent variable: Total 1AB

b. Predictors: (Constant), 1EC, 1EAO, 1ESM, 1ER, 1ESA, 1EE, 1EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	19.248	1.319		14.596	.000		
	1ESA	.004	.024	.025	.172	.864	.587	1.704
	1EE	.021	.029	.125	.743	.460	.443	2.259
	1EAO	.010	.028	.062	.368	.714	.444	2.250
	1ER	.008	.026	.046	.312	.756	.583	1.717
	1ESM	.036	.027	.202	1.343	.183	.555	1.803
	1EMO	-.020	.034	-.104	-.581	.563	.392	2.551
	1EC	.005	.023	.027	.219	.827	.803	1.246

a. Dependent variable: Total 1AB

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.521[a]	.272	.201	4.5473	.272	3.841	7	72	.001

a. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	556.008	7	79.430	3.841	.001[b]
	Residual	1488.792	72	20.678		
	Total	2044.800	79			

a. Dependent variable: Total 2VI

b. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	21.922	1.281		17.110	.000		
	2ESA	-.013	.026	-.074	-.515	.608	.485	2.061
	2EE	.028	.027	.157	1.024	.309	.429	2.333
	2EAO	-.046	.033	-.251	-1.374	.174	.302	3.309
	2ER	.022	.026	.121	0.864	.391	.514	1.947
	2ESM	.032	.030	.165	1.083	.282	.437	2.287

	2EMO	.060	.038	.322	1.562	.123	.238	4.208
	2EC	.027	.023	.147	1.157	.251	.627	1.595

a. Dependent variable: Total 2VI

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.532[a]	.283	.213	4.4057	.283	4.053	7	72	.001

a. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	550.688	7	78.670	4.053	.001[b]
	Residual	1397.512	72	19.410		
	Total	1948.200	79			

a. Dependent variable: Total 2DE

b. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	17.111	1.241		13.785	.000		
	2ESA	.008	.025	.047	.326	.745	.485	2.061
	2EE	.036	.027	.209	1.373	.174	.429	2.333
	2EAO	-.021	.032	-.118	-.652	.517	.302	3.309
	2ER	-.009	.025	-.047	-.339	.736	.514	1.947
	2ESM	.033	.029	.173	1.146	.256	.437	2.287
	2EMO	.049	.037	.272	1.329	.188	.238	4.208
	2EC	.013	.023	.073	.576	.566	.627	1.595

a. Dependent variable: Total 2DE

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.387[a]	0.150	0.067	5.1386	0.150	1.809	7	72	0.099

a. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	334.354	7	47.765	1.809	.099[b]
	Residual	1901.196	72	26.405		
	Total	2235.550	79			

a. Dependent variable: Total 2AB

b. Predictors: (Constant), 2EC, 2ER, 2ESM, 2ESA, 2EAO, 2EE, 2EMO

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	21.956	1.448		15.165	.000		
	2ESA	.036	.030	.191	1.224	.225	.485	2.061
	2EE	.017	.031	.090	.543	.589	.429	2.333
	2EAO	-.002	.038	-.009	-.045	.964	.302	3.309
	2ER	-.007	.029	-.035	-.228	.820	.514	1.947
	2ESM	.031	.034	.151	.921	.360	.437	2.287
	2EMO	.017	.043	.089	.399	.691	.238	4.208
	2EC	-.007	.027	-.034	-.251	.803	.627	1.595

a. Dependent variable: Total 2AB

Model summary

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.454[a]	.206	.196	13.0028	.206	20.265	1	78	.000

a. Predictors: (Constant), 2EI total

ANOVA[a]

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	3426.203	1	3426.203	20.265	.000[b]
	Residual	13187.747	78	169.074		
	Total	16613.950	79			

a. Dependent variable: Total 2ES (Post-test total work engagement)

b. Predictors: (Constant), 2EI total

Coefficients[a]

Model		Unstandardised coefficients		Standardised coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	60.226	3.433		17.545	.000		
	2EI Total	.044	.010	.454	4.502	.000	1.000	1.000

a. Dependent variable: Total 2ES